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Water Supply Outlook For Washington

SEP 11

SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
FEB. 1, 1979

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff fram precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more af the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly ar semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and ather parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: VIEW OF A SNOTEL DATA SITE IN THE SNOWY RANGE IN WYOMING. TALL CYLINDRICAL DEVICE IS A PRECIPITATION GAGE. SNOW PILLOWS ON THE GROUND NOT VISIBLE DUE TO SNOW COVER. SHELTER HOUSE, ANTENNA TOWER, ANTENNA, AND TEMPERATURE UNIT ARE VISIBLE BEHIND THE PRECIPITATION GAGE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

USDA-SCS-PORTLAND OR. 1978

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

R.M. DAVIS

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON D C

Released by

GALEN S. BRIDGE

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

WILBUR G. HALLAUER

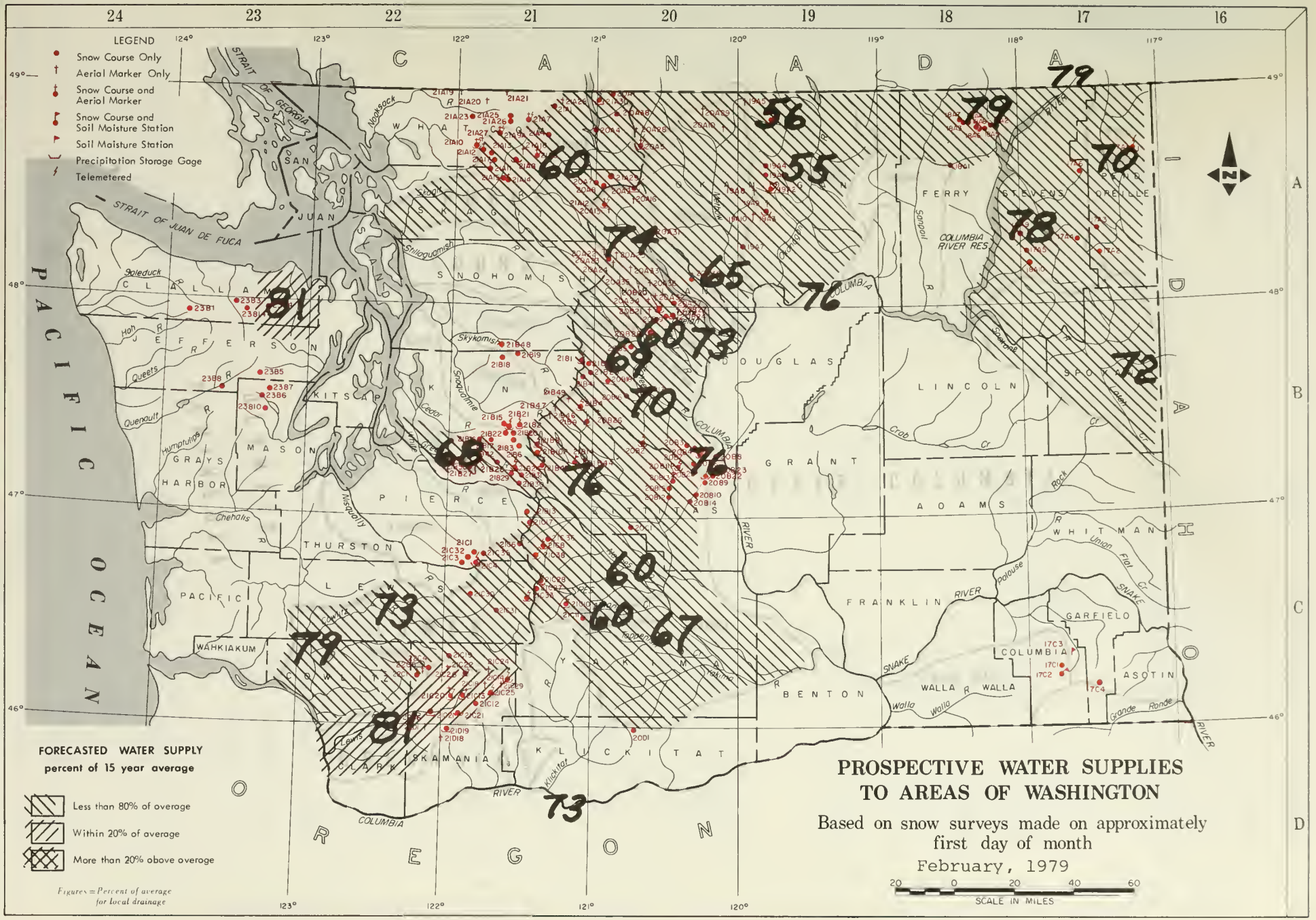
DIRECTOR
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

Report prepared by

ROBERT T. DAVIS, Snow Survey Supervisor
and
NORINE P. KENT, Statistical Assistant

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201

SCS PORTLAND OR 1978 M7-L-22078


LEGEND
Snow Course Only
Aerial Marker Only
Snow Course and Aerial Marker
Snow Course and Soil Moisture Station
Soil Moisture Station
Precipitation Storage Gage
Telemetered
FORECASTED WATER SUPPLY
percent of 15 year average
Less than 80% of average
Within 20% of average
More than 20% above average
Figures = Percent of average for local drainage
PROSPECTIVE WATER SUPPLIES
TO AREAS OF WASHINGTON
Based on snow surveys made on approximately first day of month
February, 1979
SCALE IN MILES
CANADA
PACIFIC OCEAN
OREGON
STRAIT OF GEORGIA
STRAIT OF JUAN DE FUCA
SAN JUAN ISLAND
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
OKANOGAN
FERRY
STEVENS
PEND OREILLE
COLUMBIA RIVER RES
CLALLAM
JEFFERSON
KITSAP
KING
DOUGLAS
LINCOLN
SPOKANE
GRAYS HARBOR
MASON
PIERCE
KITTITAS
GRANT
ADAMS
WHITMAN
THURSTON
LEWIS
PACIFIC
WAHKIAKUM
YAKIMA
FRANKLIN
GARFIELD
COLUMBIA
ASOTIN
BENTON
WALLA WALLA
CLARK
SKAMANIA
KLICKITAT
COLUMBIA RIVER
SNAKE RIVER
Skagit
Stillaguamish
Skykomish
Snoqualmie
Cedar
Nisqually
Cowlitz
Chehalis
Yakima
Klickitat
Palouse
Walla Walla
Grande Ronde
Spokane
Sanpoil
Okanogan
Methow
Wenatchee
Entiat
Crab Cr
Rock
Union Flat Cr
Soleduck
Hoh R
Queets
Quinault
Humptulips
Nooksack
Lewis
Toppenish
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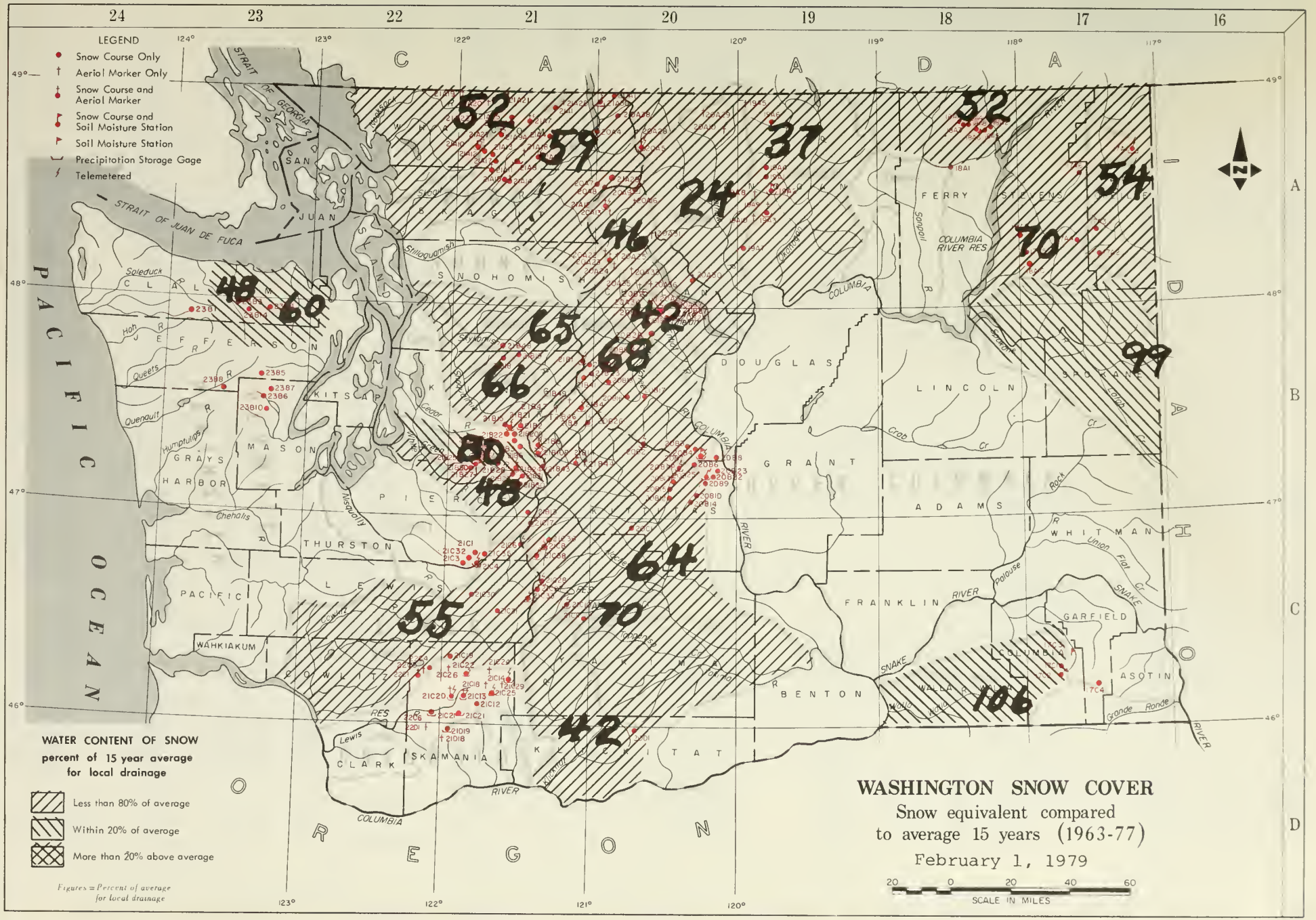
INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mauntain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snaw Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mauntain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sonpail River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Muttan Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salman Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Tauts Caulee	19A6	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5AP	7	37N	18E	6500
Horseshae Basin	19A5a	15	40N	23E	7000
Laup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Claudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	18	34N	16E	4600
Petersans	20A16a	3	34N	17E	3730
Rainy Pass	20A9P	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20828a	19	28N	18E	5425
Brief	20819	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pape Ridge	20820P	22	29N	18E	3540
Pape Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20821a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21823	7	26N	15E	3170
Berne-Mill Creek (New)	21841SP	13	26N	14E	3240
Blewett Pass No. 2	2082P	35	22N	17E	4270
Chiwaukum G. S.	20816	4	25N	17E	1810
Lake Wenatchee	2085	33	27N	17E	1970
Leavenworth R. S.	20817	1	24N	17E	1127
Merritt	20818	4	26N	16E	2140
Stevens Pass	2181P	14	26N	13E	4070
Stevens Pass Sand Shed	21845	12	26N	19E	3700
Traugh #2	20B25SP	10	20N	20E	5310
Calackum Creek					
Colockum Creek Upper	20822	11	20N	20E	5300
Calackum Creek Lower	20823	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	2083	12	21N	19E	4400
Scaut-A-Vista	2084	18	21N	20E	3400
Stemilt Creek					
Jump-Off	2088	34	21N	20E	4450
Stemilt Slide	2086	30	21N	20E	5000
Upper Wheeler	2087PM	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Baulder Creek	21B9P	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Colackum Pass	2089	25	20N	20E	5370
Caake Creek	20B10	17	19N	20E	4123
Domery Flat	21B44m	15	20N	14E	2200
Fish Lake	21B4P	28	24N	14E	3371
Green Lake	21C10P	3	12N	13E	6000
Grouse Camp	20B11P	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Jae Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21B47a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17P	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8P	13	21N	11E	2450
Van Epps Pass	20B26a	16	23N	15E	5925
Walters Flat	20B15	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28P	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500
LOWER COLUMBIA DRAINAGE					
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Mill Creek					
Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
White Salmon River					
Cultus Creek	21C12	35	7N	8E	4000
Lewis River					
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21P	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25P	28	8N	9E	3500
Lewis River (cantinued)					
Lane Pine Shelter	21C26P	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldman Pass	21D19P	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20aP	16	8N	7E	3400
Surprise Lakes	21C13AP	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cawlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Ohanapecash	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33P	11	13N	11E	5900
Potato Hill	21C14P	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250
PUGET SOUND DRAINAGE					
Nisqually River					
Ghast Farest	21C4P	23	15N	8E	4550
Langmire	21C3	29	15N	8E	2760
Paradise Pork (New)	21C35	13	15N	8E	5500
Stem Glade	21C1	13	15N	8E	5050
White River					
Corral Pass	21B13	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Chorley Creek	21825	27	21N	8E	1200
Cougar Mountain	21842SP	21	21N	9E	3200
Grass Mountain No. 2	21827	14	20N	8E	2900
Grass Mountain No. 3	21828	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SPp	14	20N	11E	5000
Stampede Pass	21810P	25	21N	11E	3860
Twin Camp	21830	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21821P	30	22N	10E	3300
Mt. Gardner Aux.	21822	31	22N	10E	2500
Mt. Lindsay	21816	31	22N	9E	2500
Mt. Washington	21815	8	22N	9E	3000
Rex River	21817	11	21N	9E	2400
South Fork Cedar	2186	24	21N	10E	3000
Tinkham Creek	21820	1	21N	10E	3400
Snoqualmie River					
Alpine Meadow	21848	31	27N	9E	3500
Olallie Meadows	2182P	19	22N	11E	3625
South Fork Tolt	21818	26	26N	9E	1900
Skykamish River					
Lake Elizabeth	21819	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Tap	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeaut Meadaws (New)	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadaws Cabins	20A8	29	36N	14E	1900
New Hazameen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30P	10	35N	14E	4200
Baker River					
Baker Pass	21A27a	1	37N	7E	4900
Dack Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Koma Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	8E	3600
Maunt Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Naaksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Volley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skakomish River					
Black and White	2387	17	24N	5W	4200
Block and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Hame Sweet Home	2385	28	25N	5W	5200
Sundawn Pass	2388	25	24N	7W	3900
Soleduck River					
Deer Lake	2381	14	28N	9W	3900

LEGEND

21A7	Snow Course Only
21A7e	Aerial Merker Only
21A7A	Snow Course And Aeriel Merker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitetion Storege Gege
21A7p	Precipitetion Storage Gage
21A7SP	Snow Pillow

SCS-PORTLAND, OR., 1978 M7-OL-2702BC



INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18AB	5	3BN	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	1BA9	34	32N	3BE	28B5
Chewelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	1BA10	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Muttan Creek No. 1	19A1	30	37N	24E	5700
Muttan Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methaw River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5AP	7	37N	18E	6500
Harseshae Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Claudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	1B	34N	16E	4600
Petersans	20A16a	3	34N	17E	3730
Rainy Pass	20A9P	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20B28a	19	2BN	1BE	5425
Brief	20B19	34	2BN	19E	1600
Entiat Meadows	20A33a	2B	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	2BN	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	2BN	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2P	35	22N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1B10
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B1B	4	26N	16E	2140
Stevens Pass	21B1P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	20N	20E	5310
Colockum Creek					
Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20B23	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Vista	20B4	1B	21N	20E	3400
Stemilt Creek					
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9P	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Colockum Pass	20B9	25	20N	20E	5370
Coake Creek	20B10	17	19N	20E	4123
Domery Flat	21B44m	15	20N	14E	2200
Fish Lake	21B4P	28	24N	14E	3371
Green Lake	21C10P	3	12N	13E	6000
Grouse Camp	20B11P	29	21N	19E	53B5
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21B47a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17P	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8P	13	21N	11E	2450
Van Epps Pass	20B26a	16	23N	15E	5925
Walters Flot	20B15	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C2BP	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500
LOWER COLUMBIA DRAINAGE					
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Mill Creek					
Couse	17C3m	2	9N	40E	3370
Hamestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
White Salmon River					
Cultus Creek	21C12	35	7N	8E	4000
Lewis River					
Blue Lake	21C22a	19	9N	BE	4800
Bob's Trail	21C21P	25	8N	7E	2200
Calamity Ridge	22D1a	B	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25P	28	BN	9E	3500
Lewis River (continued)					
Lane Pine Shelter	21C26P	8	9N	7E	3800
Marble Mountain	22C5a	24	BN	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldman Pass	21D19P	22	6N	7E	3100
Ploins of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20aP	16	BN	7E	3400
Surprise Lakes	21C13AP	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Mosquita Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	28	15N	10E	2200
Packwaad Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33P	11	13N	11E	5900
Patata Hill	21C14P	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250
PUGET SOUND DRAINAGE					
Nisqually River					
Ghost Forest	21C4P	23	15N	BE	4550
Langmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	BE	5500
Stem Glade	21C1	13	15N	8E	5050
White River					
Corral Pass	21B13	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	BE	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	BE	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21B10P	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
Sauth Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
Sauth Fork Tolt	21B1B	26	26N	9E	1900
Skykomish River					
Lake Elizabeth	21B19	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeaut Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A3B	B	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hazameen Lake	20A7	19	40N	14E	2B00
Thunder Basin	21A30P	10	35N	14E	4200
Baker River					
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11A	B	36N	8E	3B00
Easy Poss	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	3BN	11E	5400
Komo Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	1B	37N	BE	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	1B	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Nooksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Conyon	21A20A	20	40N	BE	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panorama Snaw Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skakomish River					
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	28	25N	5W	5200
Sundown Pass	23B8	25	24N	7W	3900
Soleduck River					
Deer Lake	23B1	14	2BN	9W	3900

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington

February 1, 1979

* *
* The water supply outlook for irrigation and power in the *
* state of Washington is again very poor for this time of year. *
* It is not nearly as bad as it was during the 1977 dry period, *
* but the outlook is not good. Snow packs vary from a low of *
* 24 percent of normal to a high of 6 percent above and the *
* average snow water equivalent throughout the state is approx- *
* imately 50 percent of normal. The low elevation snow pack is *
* much better than that which was measured in the upper reaches *
* of the watersheds but the higher elevations are generally *
* considered the water producing areas for spring and summer *
* flows. Rainfall has been below normal since September over *
* the entire Columbia Basin. This, coupled with the snow pack *
* measured as of February 1, means that the runoff expected *
* during the forthcoming runoff period will range from the high *
* fifties to the low eighties. The storms which have occurred *
* during the first part of February have been encouraging to *
* the water users, but it will take many more storm periods *
* such as we have experienced to bring the water supply up to *
* normal. *
* *

SNOW COVER

The snow packs measured as of February 1 are not the lowest of record, but in many cases the second lowest. Cayuse Pass, for example, a snow course measured by the U.S.G.S., has 23 years of record for February 1 measurements. This year, it is next to the driest year. Cayuse Pass has a snow pack that is 46 percent of average, but three and a half times greater than was measured in 1977. Another interesting factor about the snow cover this year is that the water equivalent is essentially similar at both high and low elevations. Many of our measurements indicate that in a three thousand foot rise in elevation there is no increase in either snow depth or water content. The storms that put this snow cover down were uniform and the extremely cold temperatures during December and January did not allow any of this low elevation snow to melt off. The results are that the snow pack at the lower elevations generally have a much higher water equivalent as compared to normal than that at the higher elevations. A break down of some key watersheds is as follows: In the Okanogan River Drainage, 31 snow courses were measured and these have a snow pack that is 51 percent below that which was measured last year, 216 percent of that which was measured in 1977 and 37 percent of average. In the Yakima Basin, the 26 snow courses measured

show that this year's snow pack is 36 percent below last year and average, but 406 percent greater than 1977. Mill Creek Drainage in the Lower Columbia, a tributary to the Walla Walla River, has three snow courses. The snow pack in this area is excellent; 93 percent greater than was measured last year at this time, 725 percent greater than was measured in 1977, and 6 percent greater than average. This watershed is the best in the state. Conditions to the south, in the Oregon Blue Mountains, are similar. In the Puget Sound area, the Green River Watershed is measured by 11 snow courses. The snow pack here is 108 percent greater than was measured last year, 672 percent greater than was measured in 1977, but still 20 percent below normal. The Skagit River Drainage, measured by 14 snow courses, has a snow pack that is 42 percent less than was measured last year, 405 percent greater than 1977, and 41 percent below normal. On the Olympic Peninsula, the snow pack is 54 percent of average.

RESERVOIRS

Generally speaking, the reservoir situation in the state of Washington is not too bad for both power and irrigation, but there are some reservoirs that are very subnormal. Coeur d'Alene Lake, for example, is only 6 percent full as of February 1. Of the power reservoirs, Franklin D. Roosevelt Lake has more water in storage than normal for this time of year; Lake Chelan has slightly less than normal and Ross Reservoir is down about 30 percent from average. The irrigation reservoirs are mixed, but the two small reservoirs in the Okanogan area, Salmon Lake and Conconully Reservoir, are in excellent shape for this time of year. The five irrigation reservoirs in the Yakima Basin have less than normal amounts of water in storage, but with careful management adequate water should be available in spite of the poor runoff expectations.

PRECIPITATION

Rainfall over the Columbia Basin during the September-October period was above normal in the Canadian portion of the watersheds but subnormal in the Washington area. Since then, it has been subnormal over the complete Columbia Basin every month. The Upper Columbia winter precipitation has been 60 percent of normal; 56 percent in northeastern Washington; 78 percent in the southeastern portion; 51 percent along the east slopes of the Cascades. In the northwest, rainfall was 62 percent of normal and 50 percent in the southwest.

STREAMFLOW

Flows measured by the Geological Survey were all subnormal during the month of January, ranging from a low of 21 percent of normal to a high of 74 percent. Most fluctuations occur on the smaller watersheds with the larger drainages like the Columbia having the better flows, percentagewise. Forecasts made of spring and summer runoff range from 55 percent of normal for the Okanogan River near Tonasket to a high of 81 percent of normal for the Lewis River. Flows of the main stem, as summarized by the forecast of The Dalles, Oregon, are for 73 percent of normal outflows for the April-September period. The forecast for the Pend Oreille River below Box Canyon is for 70 percent of normal outflow; the Okanogan, as mentioned above, 55 percent; Methow, 65 percent; the Chelan, 73 percent; the Wenatchee, 70 percent; and the Yakima River, as measured near Parker, 67 percent. On the west side, only the Skagit and Green Rivers are forecast as of February 1. The Skagit River is expected to have a 60 percent of normal outflow during the April-September period and the Green River, 68 percent - but this for a February-September period.

STREAMFLOW FORECASTS - FEBRUARY 1979

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. Streamflow figures for 1978 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1979	% 15-yr. Avg.	Fore-cast period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr Average 63-77
COLUMBIA BASIN							
COLUMBIA RIVER SYSTEM **							
Columbia River	35900	79	Apr-Sept	44008	31562	53969	45502
at Birchbank 1/	28700	79	Apr-July	34030	23812	38930	36353
	21000	80	Apr-June	24082	18026	25889	26194
Columbia River	51400	76	Apr-Sept	66868	41056	81878	68012
at Grand Coulee 1/	43100	76	Apr-July	54559	32018	63543	57035
	34090	77	Apr-June	41585	25623	47065	44273
Columbia River	56200	76	Apr-Sept	72892	43415	87384	73935
bl. Rock Island Dam 1/	47600	76	Apr-July	60163	34253	68404	62462
	37300	77	Apr-June	46242	27563	50696	48489
Columbia River	75000	73	Apr-Sept	101055	54092	120643	103493
At The Dalles, OR 1/	64200	73	Apr-July	84815	42940	97836	88519
	52700	74	Apr-June	67353	35524	77318	71237
PEND OREILLE RIVER SYSTEM **							
Pend Oreille River	11200	70	Apr-Sept	15581	4130	16946	15950
bl. Box Canyon	10300	70	Apr-July	14080	2715	15271	14690
	8350	71	Apr-June	11750	2261	11814	11760
KETTLE RIVER SYSTEM							
Kettle River	1460	79	Apr-Sept	-	1145	2434	1846
nr. Laurier	1385	79	Apr-July	-	1105	2112	1754
	1251	79	Apr-June	1629	1037	1826	1588
Colville River	104	78	Apr-Sept	-	26	123	134
at Kettle Falls	94	76	Apr-July	-	22	106	123
	88	77	Apr-June	-	20	98	115

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

** Forecasts made by National Weather Service, River Forecast Center, Portland, OR.

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast Period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr 63-77
SPOKANE RIVER SYSTEM ***							
Spokane River	2100	72	Apr-Sept	2427	-	3418	2910
at Post Falls, ID 2/	2000	73	Apr-July	2330	-	3275	2733
	1950	75	Apr-June	2199	-	3033	2600
OKANOGAN RIVER SYSTEM **							
Similkameen River	850	56	Apr-Sept	1474	645	1944	1517
nr. Nighthawk	810	57	Apr-July	1334	605	1720	1417
	690	58	Apr-June	1138	547	1347	1192
Okanogan River							
nr. Tonasket	940	55	Apr-Sept	1693	708	2185	1719
	870	56	Apr-July	1509	644	1836	1565
	750	57	Apr-June	1292	583	1382	1305
METHOW RIVER SYSTEM **							
Methow River	655	65	Apr-Sept		280	1205	1011
nr. Pateros	615	66	Apr-July		246	1047	937
	500	63	Apr-June		217	802	791
CHELAN RIVER SYSTEM							
Chelan River	900	73	Apr-Sept	1804	599	1466	1237
at Chelan 3/	800	74	Apr-July	1618	481	1184	1080
	640	77	Apr-June	1307	403	836	834
Stehekin River	665	74	Apr-Sept		494	1010	904
at Stehekin	580	76	Apr-July		382	787	764
	440	76	Apr-June		311	523	578
Entiat	145	60	Apr-Sept		95	310	241
nr. Ardenvoir	135	61	Apr-July		81	266	218
	115	65	Apr-June		70	190	174
WENATCHEE RIVER SYSTEM							
Wenatchee River	900	69	Apr-Sept		633	1510	1297
at Plain	830	72	Apr-July		542	1263	1156
	680	75	Apr-June		479	891	903
Wenatchee River	1230	70	Apr-Sept		839	2074	1767
at Peshastin	1140	72	Apr-July		730	1746	1587
	930	74	Apr-June		753	1238	1250
Stemilt Basin nr. Wenatchee	105*	74	May-Sept			144*	138*
Icicle Creek	275	74	Apr-Sept				371
nr. Leavenworth	255	75	Apr-July				342
	210	76	Apr-June				279

* Thousands of Miners' Inches.

** Forecasts made by National Weather Service, River Forecast Center, Portland, OR.

*** Forecasts made by Jack A. Wilson, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr. Average 63-77
YAKIMA RIVER SYSTEM							
Yakima River	115	80	Apr-Sept	106	78	157	145
nr. Martin 4/	105	79	Apr-July	92	67	141	133
	95	83	Apr-June	83	67	117	114
Yakima River	805	76	Apr-Sept	911	493	1091	1062
at Cle Elum 5/	740	76	Apr-July	726	416	980	970
	665	79	Apr-June	636	379	807	838
Yakima River	1450	67	Apr-Sept	2059	802	2521	2168
nr. Parker 6/	1400	72	Apr-July	1691	657	2205	1954
	1255	74	Apr-June	1487	611	1810	1693
Kachess River	95	74	Apr-Sept	101	61	142	126
nr. Easton 7/	90	76	Apr-July	95	55	131	119
	85	82	Apr-June	88	53	109	104
Cle Elum River	370	77	Apr-Sept	411	250	561	479
nr. Roslyn 8/	345	79	Apr-July	369	215	484	435
	300	84	Apr-June	314	193	370	358
Bumping River	90	62	Apr-Sept	117	63	175	146
nr. Nile 9/	85	64	Apr-July	105	55	152	133
	75	71	Apr-June	89	51	109	106
American River	85	67	Apr-Sept		50	132	127
nr. Nile	80	69	Apr-July		44	116	116
	65	68	Apr-June		39	86	95
Tieton River	155	62	Apr-Sept	238	128	302	252
at Tieton Dam 10/	130	61	Apr-July	196	92	242	212
	105	62	Apr-June	156	76	179	168
Naches River	535	60	Apr-Sept	760	327	1046	890
nr. Naches 11/	490	61	Apr-July	657	275	908	802
	430	63	Apr-June	564	245	717	678
Ahtanum Creek	28	60	Apr-Sept		8	51	47
nr. Tampico 12/	26	62	Apr-July		7	45	42
	23	62	Apr-June		6	37	37

4/ Observed flow corrected for storage in Lake Keechelus.
5/ Observed flow corrected for storage in Keechelus, Kachess,and Cle Elum Lakes and diversion by Kittitas Canal.
6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.
7/ Observed flow corrected for storage in Lake Kachess.
8/ Observed flow corrected for storage in Lake Cle Elum.
9/ Observed flow corrected for storage in Bumping Lake.
10/ Observed flow corrected for storage in Rimrock Lake.
11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.
12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Forecast period	1978	1977	1976	15-Yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek	Station		Apr-Sept			41	
nr. Walla Walla	has been		Apr-July			36	
	discontinued		Apr-July			32	
Lewis River	1070	81	Apr-Sept	1134	1030	1285	1301
at Ariel 13/	920	81	Apr-July	946	832	1130	1131
	825	83	Apr-June	850	763	990	995
Cowlitz River **	1560	73	Apr-Sept		1570	2296	2125
bl. Mayfield Dam	1360	73	Apr-July		1293	1963	1853
	1200	77	Apr-June		1168	1584	1552
Cowlitz River **	2190	79	Apr-Sept	2310	2157	2924	2767
at Castle Rock 14/	1920	80	Apr-July	1886	1766	2493	2401
	1650	81	Apr-June	1616	1601	2063	2028
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River	130	81	Apr-Sept		97	160	160
nr. Sequim	105	81	Apr-July		75	128	130
	80	83	Apr-June		61	91	96
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River	1675	66	Feb-Aug		1155	3003	2532
at Newhalem 15/	1410	60	Apr-Sept		728	2943	2356
	1270	64	Apr-July		535	2322	1972
	980	66	Apr-June		429	1595	1485

13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross and Gorge Reservoirs.
** Forecasts made by National Weather Service, River Forecast Center, Portland, OR.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about February 1, 1979, as percent of the same date in 1978 and 1977 and average of record.

Tributary Basin	No. of Courses Average	1979 Snow Water Expressed as percent of 1978	1977	1963-77 Avg.
UPPER COLUMBIA BASIN				
Pend Oreille	11	44	198	54
Kettle	11	45	143	52
Colville	5	60	538	70
Spokane	4	107	288	99
Okanogan	31	49	216	37
Methow	5	17	508	24
Chelan	5	47	268	46
Entiat	11	40	525	42
Wenatchee	9	61	488	68
Yakima	26	64	506	64
Ahtanum	2	50	556	70
LOWER COLUMBIA BASIN				
Mill Creek	3	193	825	106
Klickitat	1	54	-	42
Cowlitz	2	66	343	55
PUGET SOUND				
White	3	56	480	48
Green	11	208	772	80
Snoqualmie	1	99	2862	66
Skykomish	2	61	575	65
Skagit	14	58	505	59
Nooksack	2	38	242	52
OLYMPIC PENINSULA				
Elwha	1	86	-	48
Dungeness	1	90	-	60

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured (February) 1979	1978	1977	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	13.7	134.7	21.7	145.3
Columbia	Franklin D. Roosevelt Lake	5232.0	4228.4	3149.2	4172.0	3698.2
Columbia	Banks Lake	714.9	690.8	714.9	704.2	619.4
Okanogan	Conconully Reservoir	13.0	9.7	3.0	8.0	6.2
Okanogan	Salmon Lake	10.5	10.5	6.0	9.6	7.6
Chelan	Lake Chelan	676.1	276.5	274.6	258.1	294.2
		YAKIMA				
Yakima	Keechelus Lake	157.8	66.2	130.7	65.6	97.6
Kachess	Kachess Lake	239.0	178.0	178.5	192.4	173.4
Cle Elum	Lake Cle Elum	436.9	65.6	229.4	382.0	259.7
Bumping	Bumping Lake	33.7	3.7	32.8	4.4	7.8
Tieton	Rimrock Lake	198.0	138.7	167.4	120.1	118.0
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	760.5	1001.8	769.5	1012.6
Skagit	Diablo Reservoir	90.6	86.8	85.2	83.3	84.2
Skagit	Gorge Reservoir	9.8	8.3	8.2	8.4	7.9

1/ Based on Active Storage

* 15-year Average 1963-1977

SOIL MOISTURE - FEBRUARY

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content Inches as of Feb. 1 1979	1978	1977
OKANOGAN							
Salmon Meadows	19A2M	4500	48	5.4	-	-	-
Trout Creek	3-M	3600	48	7.3	Late	3.5	3.3
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	-	8.0	-
Helmers	17C2M	4400	48	12.0	8.7	9.8	-
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	6.9	9.9	6.8

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content (Inches) as of Oct. 1 1978	1977	1976
OKANOGAN							
Salmon Meadows	19A02M	4500	48	5.4	-	-	3.4
Trout Creek	3-M	3600	48	7.3	3.7	3.2	3.4
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	5.9	-	-
Helmers	17C2M	4400	48	12.0	8.2	-	-
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	10.3	6.6	-

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct 1978 2/ Observed	FALL Departure	WINTER Nov-Dec 1978 Observed	WINTER Jan 1979 2/ Departure
Columbia in Canada	6.29	+1.27	6.62	-4.51
Pend Oreille - Spokane	2.09	-1.95	6.87	-5.31
Northeastern Washington	1.74	-0.73	3.76	-2.95
Southeastern Washington	1.22	-1.29	5.50	-1.56
Central Washington	0.60	-0.37	1.90	-1.85
North Central Washington	2.22	+0.63	2.53	-2.31
Northwest Slope Cascades	9.89	-3.32	23.46	-14.47
Southwest Slope Cascades	6.18	-2.50	14.58	-14.33

Northeastern Washington - Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.

Southeastern Washington - Touchet, Tucannon and Palouse Drainages.

Central Washington - Yakima, Wenatchee and Chelan Drainages.

North Central Washington - Methow and Okanogan Drainages.

Northwest Slope Cascades - Puget Sound Drainages.

Southwest Slope Cascades - Lower Columbia Drainages.

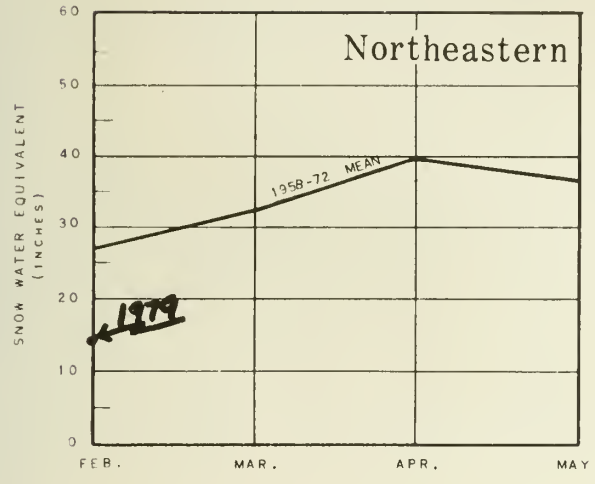
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

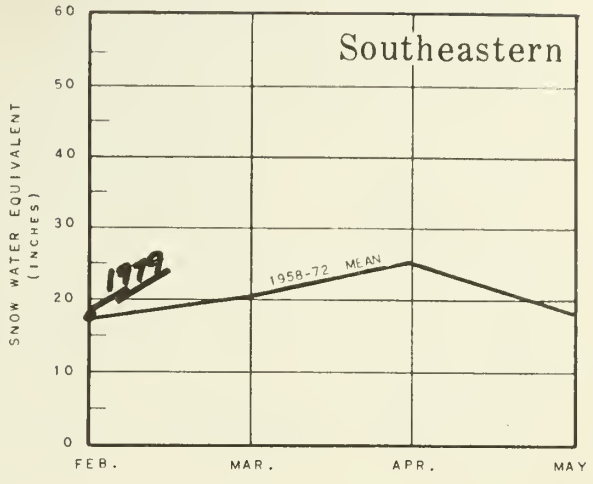
2/ - Departure from 15-year (1958-72) drainage division average.

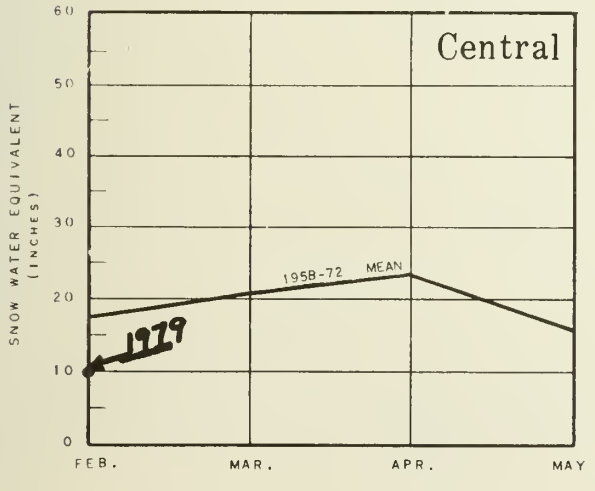
WASHINGTON SNOW COVER

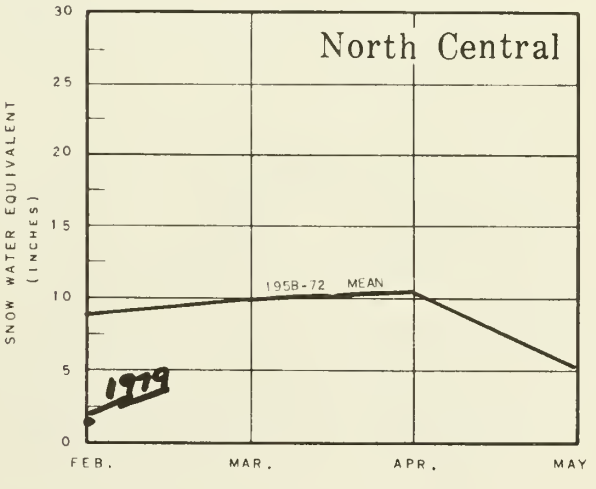
1979

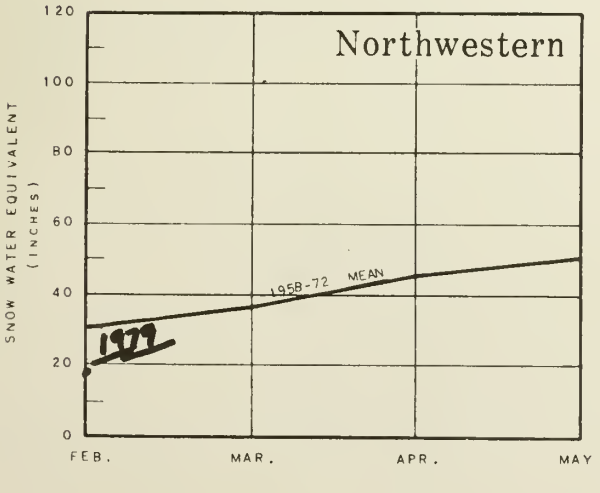
DRAINAGE AREAS

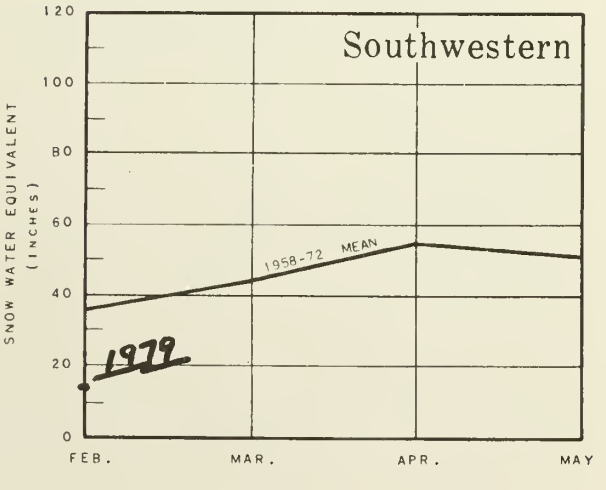










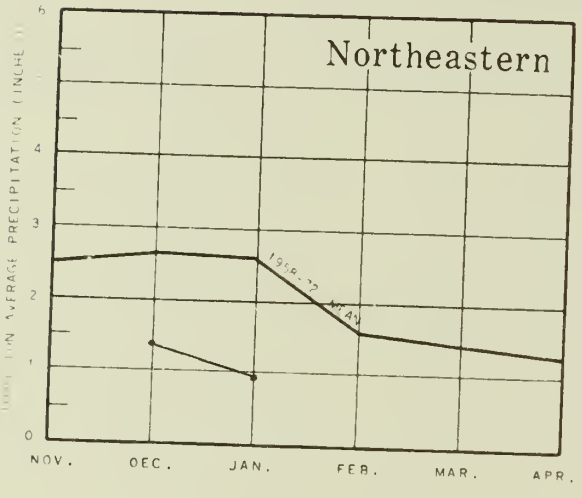


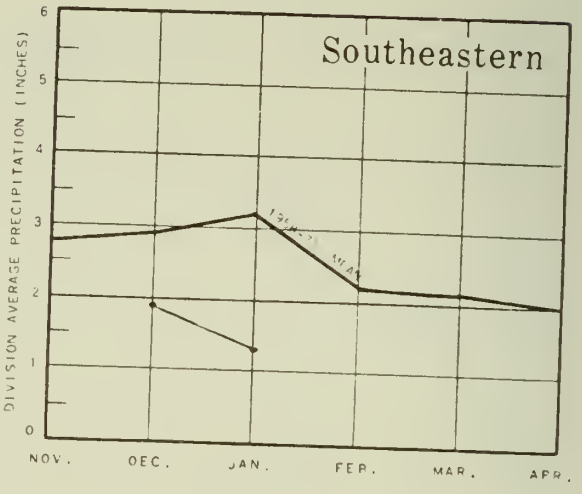
Selected Snow Survey Courses by Soil Conservation Service

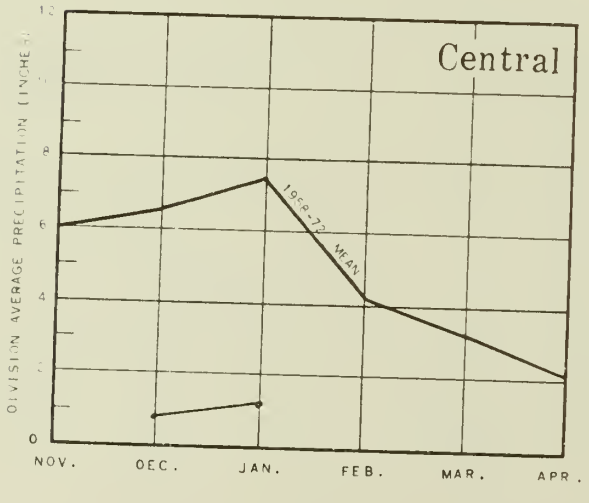
WASHINGTON VALLEY PRECIPITATION

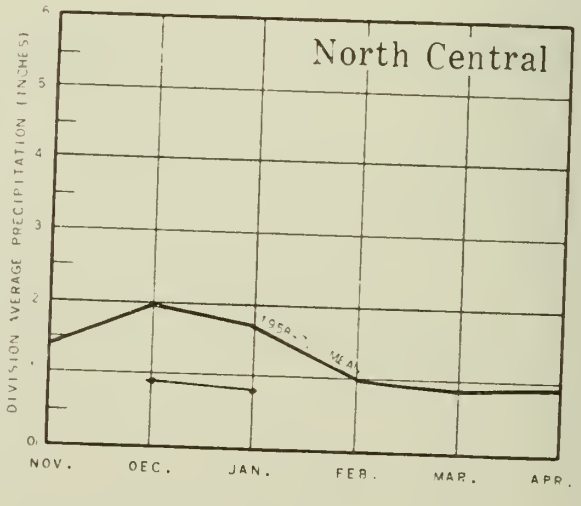
1979

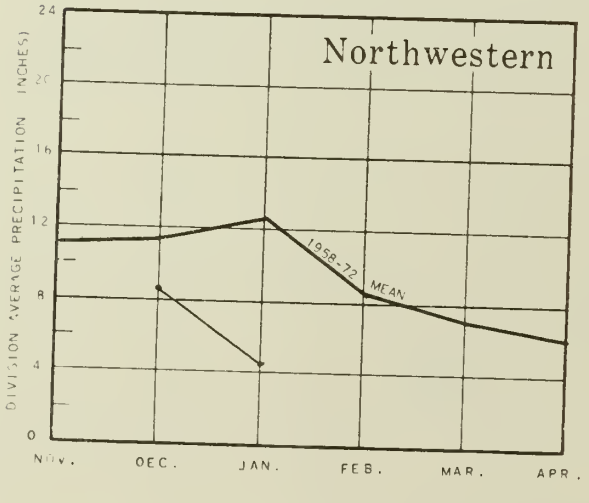
DRAINAGE AREAS

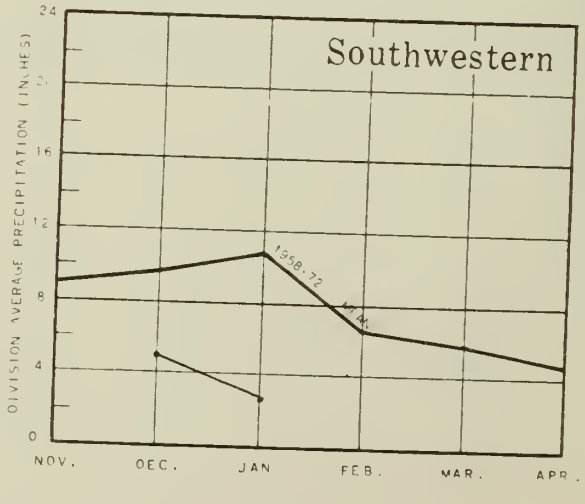






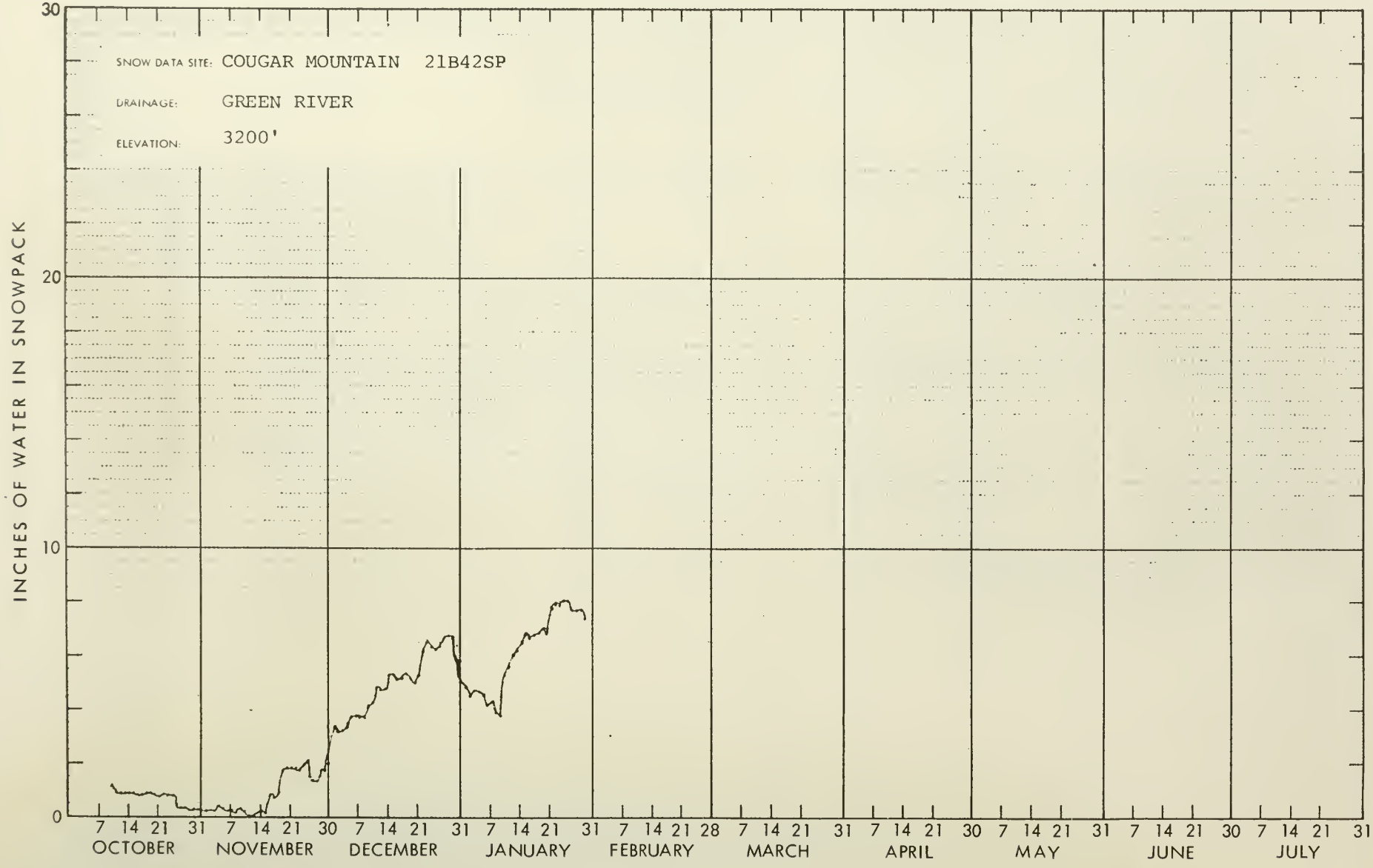






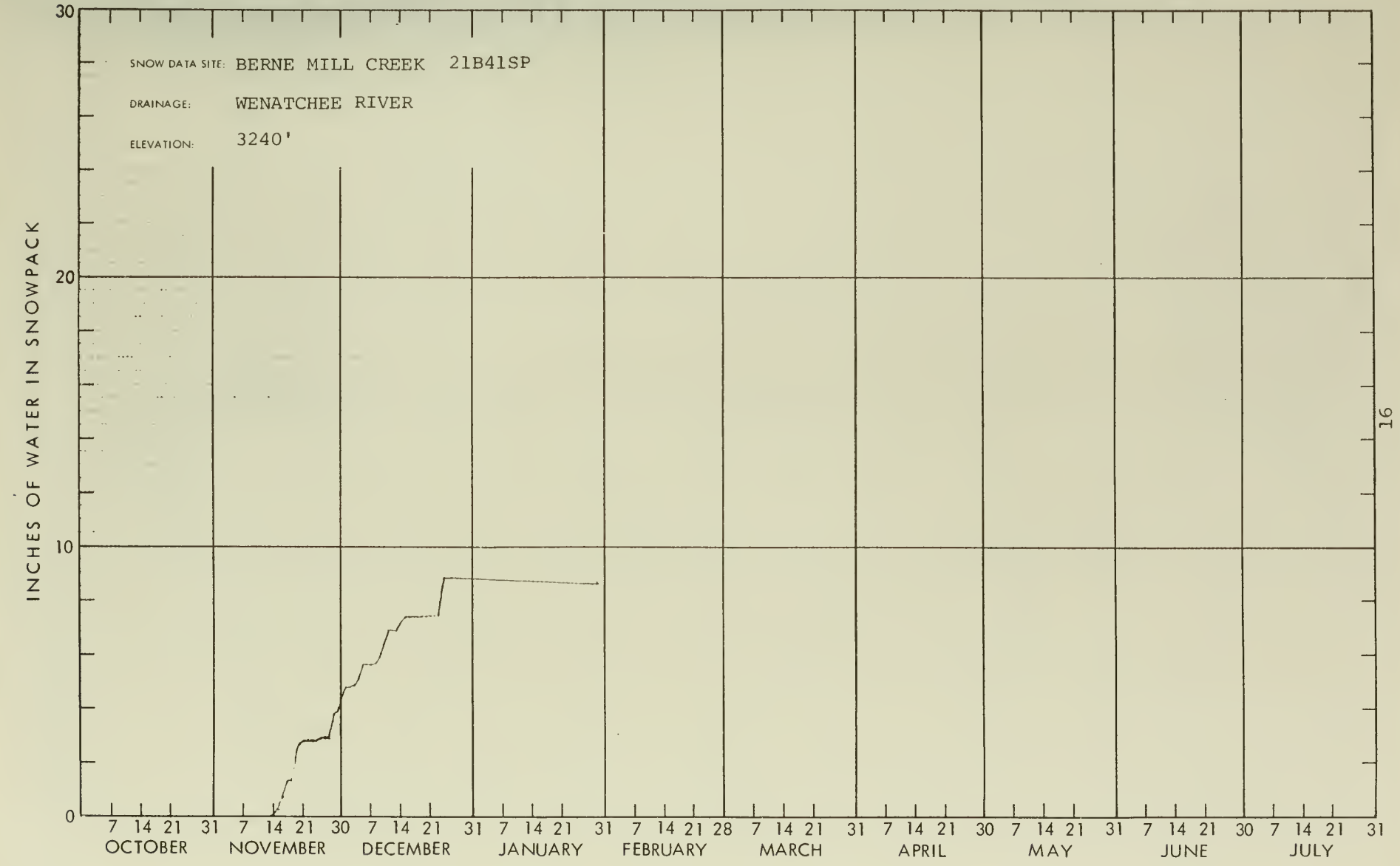
Preliminary Analysis by National Weather Service

WSFB-X138


SNOW DATA SITE: COUGAR MOUNTAIN 21B42SP
DRAINAGE: GREEN RIVER
ELEVATION: 3200'
INCHES OF WATER IN SNOWPACK
30
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY

15

WSFB-X13B


SNOW DATA SITE: BERNE MILL CREEK 21B41SP
DRAINAGE: WENATCHEE RIVER
ELEVATION: 3240'
INCHES OF WATER IN SNOWPACK
30
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
16

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 1

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Benton Meadow	16A02	2344	12/29	14	1.7	5.4	2.7
			1/29	22	3.2	6.3	5.2
Benton Spring	16A03	4900	12/29	22	3.1	12.1	7.5
			1/29	30	6.2	15.8	13.2
Chewelah	17A04	4925	1/28	25	6.5	13.2	11.5
Heart Lake Trail	14C10	4800	12/28	49	12.2	-	9.7
			2/1	48	14.5	-	18.9
Hoodoo Basin	15C10	6000	12/28	74	20.2	-	22.2
			2/1	73	25.4	-	39.7
Hoodoo Creek	15C01	5900	12/28	69	17.9	-	19.8
			2/1	67	22.5	-	37.2
Lookout	15B02	5250	12/31	41	11.2	22.0	13.8
			1/30	51	14.4	27.5	25.6
Nelson	19-Can	3050	12/29	18	3.6	8.9	7.6*
			1/31	22	4.6	11.7	11.2*
Schweitzer Bowl	16A06	4500	1/2	25	6.8	18.7	13.8
			1/30	33	9.5	25.5	23.1
Schweitzer Ridge	16A05	6100	1/2	39	11.9	26.2	21.3
			1/30	50	15.6	39.4	34.2
Winchester Creek	17A03	2970	1/29	24	3.9	8.0	8.6
KETTLE RIVER							
Barnes Creek	90-Can	5300	1/26	44	11.5	14.7	14.1*
Big White Mtn.	154-Can	5500	2/2	43	9.5	14.6	14.1*
Boulder Road	18A02	1450	12/28	9	1.0	2.4	2.3
			1/29	15	2.4	4.8	3.9
Butte Creek	18A03	4070	12/28	12	2.0	5.4	4.0
			1/29	16	2.7	8.6	6.9
Cabin Creek	18A08	3170	12/28	10	1.3	4.2	3.7
			1/29	15	2.5	6.8	9.3
Carmi	126-Can	4100	2/2	20	2.6	6.6	5.4*
Farron # 1	17-Can	4000	1/30	19	3.5	10.8	9.6*
Farron # 2	243-Can	4000	1/30	20	4.1	12.3	9.1*
Goat Creek	18A04	3595	12/28	10	1.5	4.4	3.5
			1/29	14	2.5	7.3	5.6
Monashee Pass	48A-Can	4500	1/2	32	7.2	10.1	7.4*
			1/26	33	8.5	11.4	9.6*
Snow Caps Creek	18A05	2150	12/28	10	1.8	2.4	2.5
			1/29	14	2.5	5.3	4.1
Snow Caps Trail	18A06	2720	12/28	9	1.5	3.1	2.9
			1/29	14	2.4	5.9	4.8

\# Average based on 1963-77 Average
* Average for years of record

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 2

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	Average #
KETTLE RIVER (Cont.)							
Summit G.S.	18A07	4600	12/27	10	1.7	4.5	3.5
			1/29	14	2.7	5.7	5.9
Trapping Creek Lower	166-Can	3050	2/2	20	3.2	5.0	4.4*
Trapping Creek Upper	165-Can	4450	2/2	31	6.1	8.0	7.4*
COLVILLE RIVER							
Baird	17A06	3215	1/28	23	4.4	8.6	5.5
Carlson	18A09	2885	1/28	19	4.0	4.1	3.7
Chewelah	17A04	4925	1/28	25	6.5	13.2	11.5
Stranger Mountain	17A05	5990	1/28	23	5.4	10.3	9.6
Togo	18A10	3370	1/28	21	4.2	8.4	8.6
SPOKANE RIVER							
Above Burke	15B08	4100	12/29	43	11.0	10.5	-
			1/30	51	14.2	16.1	-
4th of July Summit	16B03	3100	1/2	26	6.3	2.9	3.3
			1/30	39	9.6	7.1	7.3
Lookout	15B02	5250	12/31	41	11.2	22.0	13.8
			1/30	51	14.4	27.5	25.6
Sherwin	16C01	3200	1/2	32	8.0	5.8	-
			1/30	42	11.7	7.6	10.7
OKANOGAN RIVER							
Aberdeen Lake	6A-Can	4300	1/30	24	4.5	7.6	5.1*
Blackwall Peak	100-Can	6250	1/30	46	11.7	25.4	24.7*
Brenda Mine	193-Can	4800	12/28	28	6.2	10.0	7.2*
			1/29	32	7.7	11.9	10.0*
Brookmere	27-Can	3200	1/3	17	3.6	5.1	3.1*
			1/29	22	4.3	7.9	7.1*
Carrs Landing Upper	168-Can	3200	1/28	18	3.7	5.7	3.9*
Enderby	130-Can	6250	1/31	48	13.7	29.6	25.6
Hamilton Hill	107-Can	4900	1/30	31	7.9	15.2	10.6*
Harts Pass	20A05A	6500	1/30	59	18.4	37.1	32.7
Isontok Lake	152-Can	6300	12/31	17	3.5	6.9	4.2*
			1/30	24	5.5	8.5	6.4*
Lost Horse Mtn.	105-Can	6300	1/31	14	3.6	7.0	6.9*
Loup Loup	19A07	4650	1/30	11	1.5	8.5	7.4
McCulloch	4-Can	4200	1/1	22	3.7	5.0	3.3*
			1/28	28	4.1	6.5	5.0*
Missezula Mtn.	106-Can	5100	1/28	25	5.5	10.2	7.0*
Mission Creek	5A-Can	6000	12/29	37	8.5	11.9	9.5*
			2/1	42	10.6	15.3	13.9*
Monashee Pass	48A-Can	4500	1/2	32	7.2	10.1	7.4*
			1/26	33	8.5	11.4	9.6*

Average based on 1963-77 Average

* Average based on years of record

USDA SCS PORTLAND OREGON '813

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 3

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
OKANOGAN RIVER (Cont.)							
Mount Kobau	156-Can	5950	1/4	10	1.6	5.9	2.3*
			1/31	14	2.4	7.7	10.2*
Muckamuck +	19A09a	6390	1/28	20	3.2	15.1	11.4
Mutton Creek No. 1	19A01	5700	1/30	12	1.7	11.1	10.8
Mutton Creek No. 2 SP	19A11SP	6000	1/30	-	1.0	10.1	New
New Copper Mtn.	46A-Can	4300	1/29	18	2.4	4.7	5.3*
New Penticton Res.#2	183-Can	5225	1/30	24	4.4	6.4	7.2*
Oyama Lake	203-Can	4400	1/28	21	5.6	7.3	5.7*
Paysayten +	20A28a	4300	1/28	28	4.5	12.5	14.2
Postill Lake	55-Can	4500	1/31	27	5.8	6.9	5.9*
Rusty Creek	19A03	4000	1/31	10	1.6	6.6	5.6
Salmon Meadows	19A02	4500	1/30	11	1.4	7.3	7.5
Silver Star Mountain	99-Can	6050	1/1	36	8.8	20.4	14.7*
			1/28	44	11.2	24.8	19.6*
Starvation Mountain +	19A10a	6750	1/28	24	3.8	-	13.8
Summerland Reservoir	3A-Can	4200	12/30	22	4.7	7.0	5.0*
			1/27	29	6.5	9.4	7.8*
Touts Coulee	19A06	2845	1/29	7	1.0	3.1	3.1
Trout Creek	3-Can	4700	1/29	26	5.6	7.4	5.2*
Vaseux Creek	233-Can	4600	12/30	13	1.7	3.0	2.6*
			1/27	17	2.6	5.0	5.1*
White Rocks Mtn.	70-Can	6000	1/2	36	8.5	17.6	17.6*
			1/30	41	12.8	21.8	19.1*
METHOW RIVER							
Harts Pass	20A05A	6500	1/30	59	18.4	37.1	32.7
Loup Loup	19A07	4650	1/30	11	1.5	8.5	7.4
Mutton Creek No. 1	19A01	5700	1/30	12	1.7	11.1	10.8
Mutton Creek #2 SP	19A11SP	6000	1/30	-	1.0	10.1	New
Rusty Creek	19A03	4000	1/31	10	1.6	6.6	5.6
Salmon Meadows	19A02	4500	1/30	11	1.4	7.3	7.5
War Creek Pass +	20A31a	6500	1/28	69	13.8	-	36.2
CHELAN LAKE BASIN							
Cloudy Pass +	20A22a	6500	1/28	67	20.1	35.9	30.0
Little Meadows +	20A24a	5275	1/28	68	20.4	42.6	30.7
Lyman Lake +	20A23A	5900	1/28	84	25.2	53.3	39.7
Park Creek Flat +	20A13a	2220	1/28	45	13.5	-	26.8
Park Creek Ridge	20A12A	4600	1/28	67	20.1	44.8	36.9
Rainy Pass	20A09	4780	1/30	51	15.4	37.6	30.9
War Creek Pass +	20A31a	6500	1/28	69	13.8	-	36.2

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

WSFB-X4-L

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average #
ENTIAT RIVER							
Blue Creek G.S. +	20B28a	5425	1/31	62	17.4	34.0	New
Brief	20B19	1600	1/27	21	5.1	9.1	7.0
Entiat Meadows +	20A33a	4540	1/31	30	8.4	31.9	40.0
Entiat River Trail +	20A34a	3325	1/31	36	7.9	27.5	20.0
Four Mile Ridge +	20B27a	6800	1/31	36	10.1	27.0	30.9
Fox Camp +	20A36a	6510	1/31	56	15.7	41.0	44.7
Pope Ridge	20B20	3450	2/2	31	6.8	20.2	15.2
Pugh Ridge	20A32a	6725	1/31	63	17.6	26.2	29.5
Shady Pass	20A37	6200	2/1	37	10.4	30.0	20.7
Snow Brushy +	20A35a	3910	1/31	45	9.9	36.2	30.5
Tommy Creek +	20B21a	4900	1/31	30	8.4	20.5	22.5
WENATCHEE RIVER							
Berne-Mill Creek	21B23	3170	11/28	15	3.8	8.9	4.5
			12/13	32	8.4	16.8	7.8
			12/27	41	12.0	17.2	11.0
			1/11	50	14.6	24.4	16.2
			1/29	54	14.5	27.2	21.5
Berne-Mill Creek New	21B41SP	3240	11/28	15	4.2	8.6	4.5
			12/27	39	12.1	12.4	11.6
			1/11	55	17.2	-	-
			1/29	53	14.4	20.8	20.0
Blewett Pass No.2	20B02	4270	12/20	24	5.9	8.5	6.3
			1/30	33	9.1	14.3	13.2
Chiwaukum G.S.	20B16	1810	11/28	9	2.0	3.4	1.5
			12/13	17	3.4	6.4	3.2
			12/27	19	4.9	7.1	4.8
			1/11	28	5.4	8.9	7.0
			1/29	26	5.9	9.6	9.5
Lake Wenatchee	20B05	1970	11/28	15	3.0	7.2	1.6
			12/13	22	4.6	11.9	3.6
			12/27	21	6.9	12.4	5.9
			1/11	31	8.0	15.5	9.5
			1/29	33	9.6	15.4	11.8
Leavenworth R.S.	20B17	1127	11/1	0	0.0	0.0	0.0
			11/13	0	0.0	0.0	0.1
			11/27	6	1.3	0.5	0.7
			12/12	11	2.3	2.0	1.7
			12/27	12	3.1	2.2	3.1
			1/11	18	4.0	4.9	4.8
			1/26	16	3.7	5.8	5.9
Lyman Lake +	20A23A	5900	1/28	84	25.2	53.3	39.7

\# Average based on 1963-77 Average

\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (inches)	Water Content (inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
WENATCHEE RIVER (Cont.)							
Merritt	20B18	2140	11/28	16	3.0	5.8	2.3
			12/13	23	5.3	12.0	4.8
			12/27	24	7.0	12.8	7.1
			1/11	34	8.9	16.6	11.2
			1/29	37	9.9	17.0	14.0
Stevens Pass	21B01	4070	11/14	0	0.0	10.5	3.6
			11/28	20	5.1	15.9	8.1
			12/13	45	11.8	29.0	14.7
			12/27	65	19.7	29.2	21.9
			1/11	71	23.0	37.7	30.1
			1/29	80	23.7	39.5	37.3
Stevens Pass Sand Shed	21B45	3700	11/28	13	3.7	11.0	6.4
			12/13	35	9.7	19.5	11.2
			12/27	51	15.3	21.9	15.3
			1/29	60	17.8	28.9	26.8
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300	1/29	22	3.7	12.1	11.7
Colockum Creek Lower	20B23	4300	1/29	22	4.2	9.8	8.5
Trough # 2	20B25SP	5310	1/29	22	4.5	13.5	New
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	1/30	23	4.3	9.6	6.7
Scout-A-Vista	20B04	3400	1/30	24	4.3	9.7	6.9
STEMILT CREEK							
Jump-Off	20B08	4450	1/29	24	5.4	10.2	7.1
Stemilt Slide	20B06	5000	1/29	28	6.0	14.3	11.2
Upper Wheeler	20B07	4400	1/29	24	5.4	10.6	8.4
YAKIMA RIVER							
Ahtanum R.S.	21C11	3100	1/2	10	2.5	1.9	3.2
			1/26	18	4.6	8.6	6.1
Blewett Pass No. 2	20B02	4270	12/20	24	5.9	8.5	6.5
			1/30	33	9.1	14.3	13.2
Bumping Lake Old	21C08	3450	12/28	15	3.2	7.2	6.5
			1/16	25	5.1	8.1	10.4
			1/29	22	4.8	10.1	13.3
Bumping Lake New	21C36	3400	11/30	5	1.4	-	3.7
			12/28	18	4.4	9.8	8.3
			1/16	29	5.9	11.9	14.2
			1/29	27	5.2	12.8	16.8

Average based on 1963-77 average

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 6

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
YAKIMA RIVER (Cont.)							
Cayuse Pass	21C06	5300	12/27	70	21.8	39.1	34.4
			1/29	81	27.1	52.7	59.5
Colockum Pass	20B09	5370	1/26	25	6.5	18.4	11.8
Cooke Creek	20B10	4123	1/26	11	2.2	0.0	5.3
Corral Pass	21B13	6000	1/29	59	19.1	26.8	-
Green Lake	21C10	6000	1/26	38	12.8	27.7	19.4
Grouse Camp	20B11	5385	1/25	26	7.8	16.7	12.3
High Creek	20B12	2930	1/25	17	3.4	5.1	5.5
Joe Lake +	21B46a	4624	2/1	96	35.5	49.2	41.8
Lake Cle Elum	21B14M	2200	12/2	10	2.3	4.0	1.1
			12/12	16	3.3	3.9	2.4
			12/28	13	3.8	5.4	3.9
			1/10	24	4.8	5.6	7.1
			1/31	23	5.3	6.2	8.5
Lemah Creek +	21B47a	3327	2/1	69	25.5	34.8	31.0
Manashtash	20C01	3935	1/25	14	2.9	6.9	4.3
Morse Lake	21C17	5400	1/30	61	19.3	39.9	38.9
Nanum	20B13	3875	1/25	18	3.9	6.8	7.4
Olallie Meadows	21B02	3625	1/29	65	22.8	23.2	34.8
Satus Pass	20D01	4030	1/29	12	3.7	6.9	8.9
Stampede Pass SP	21B10	3860	11/30	31	5.3	13.0	7.5
			12/14	43	11.1	22.5	14.0
			1/1	49	22.3	27.6	17.4
			1/15	64	21.9	33.5	24.8
			2/1	68	23.4	34.0	31.5
Trail Creek	20B14	3360	1/26	13	2.6	4.1	2.9
Tunnel Avenue	21B08	2450	12/1	14	3.8	3.4	3.1
			12/14	21	5.8	7.4	5.8
			12/28	24	6.7	9.5	8.4
			1/11	33	8.7	11.7	13.7
			1/30	38	10.0	12.3	17.8
Van Epps Pass +	20B26a	5925	2/1	98	36.2	44.0	39.4
Walters Flat	20B15	3360	1/25	17	3.6	6.0	6.5
Waptus Lake +	21B49a	3024	2/1	72	26.6	32.4	32.2
White Pass (E.Side)	21C28	4500	11/29	11	3.3	-	4.6
			12/18	25	5.4	-	7.4
			1/15	38	8.7	12.0	14.4
			1/30	36	11.7	14.2	18.4
AHTANUM CREEK							
Ahtanum R.S.	21C11	3100	1/2	10	2.5	1.9	3.2
			1/26	18	4.6	8.6	6.1
Green Lake	21C10	6000	1/26	38	12.8	27.7	19.4

\# Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 7

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
LOWER COLUMBIA DRAINAGE							
ASOTIN CREEK							
Spruce Springs	17C04	5700	1/29	49	13.8	12.7	18.2
MILL CREEK							
Homestead	17C01	4030	1/24	36	8.1	3.8	7.2
Martin Springs	17C02	4400	1/24	43	11.0	4.6	10.3
Tollgate	18D03M	5070	1/26	56	17.5	13.7	17.7
KLICKITAT RIVER							
Satus Pass	20D01	4030	1/29	12	3.7	6.9	8.9
COWLITZ RIVER							
Cayuse Pass	21C06	5300	12/27	70	21.8	39.1	34.4
			1/29	81	27.1	52.7	59.5
White Pass (E. Side)	21C28	4500	11/29	11	3.3	-	4.6
			12/18	25	5.4	-	7.4
			1/15	38	8.7	12.0	14.4
			1/30	36	11.7	14.2	18.4
PUGET SOUND DRAINAGE							
WHITE RIVER							
Cayuse Pass	21C06	5300	12/27	70	21.8	39.1	34.4
			1/29	81	27.1	52.7	59.5
Corral Pass	21B13	6000	1/29	59	19.1	26.8	-
Morse Lake	21C17	5400	1/30	61	19.3	39.9	38.9
GREEN RIVER							
Airstrip	21B24	1800	11/27	4	0.8	0.0	0.6
			1/2	6	1.2	0.4	1.8
			1/29	15	3.7	0.0	5.6
Charley Creek	21B25	1200	11/27	0	0.0	0.0	0.1
			1/2	0	0.0	0.0	1.5
			1/29	8	2.2	0.0	1.3
Cougar Mountain	21B42SP	3200	1/29	36	12.0	2.0	17.3
Grass Mtn. No. 2	21B27	2900	11/27	6	1.8	0.0	2.1
			1/2	11	2.8	0.9	5.8
			1/29	28	8.5	3.3	15.2
Grass Mtn. No. 3	21B28	2100	1/2	7	1.3	1.1	2.2
			1/29	18	4.8	0.0	5.2

Average based on 1963-77 average

‡ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 8

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
GREEN RIVER (Cont.)							
Lester Creek	21B29	3100	11/27	13	1.9	2.0	2.7
			1/2	32	10.1	2.5	8.5
			1/29	48	13.0	6.8	17.5
Lynn Lake	21B50	4000	11/27	2	0.7	0.0	2.7
			1/2	28	9.9	1.2	8.5
			1/29	42	14.9	2.3	18.2
Sawmill Ridge	21B31	4700	11/27	12	2.0	9.0	5.6
			1/2	42	13.6	17.3	13.7
			1/29	54	16.3	21.2	27.5
Snowshoe Butte	21B43SP	5000	1/29	79	26.6	32.4	40.8
Stampede Pass SP	21B10	3860	11/30	31	5.3	13.0	7.5
			12/14	43	11.1	22.5	14.0
			1/1	49	22.3	27.6	17.4
			1/15	64	21.9	33.5	24.8
			2/1	68	23.4	34.0	31.5
Twin Camp	21B30	4100	11/27	12	2.4	4.8	3.4
			1/2	36	12.0	7.5	9.4
			1/29	46	14.3	10.9	18.4
SNOQUALMIE RIVER							
Olallie Meadows	21B02	3625	1/29	65	22.8	23.2	34.8
SKYKOMISH RIVER							
Stevens Pass	21B01	4070	11/14	0	0.0	10.5	3.6
			11/28	20	5.1	15.9	8.1
			12/13	45	11.8	29.0	14.7
			12/27	65	19.7	29.2	21.9
			1/11	71	23.0	37.7	30.1
			1/29	80	23.7	39.5	37.3
Stevens Pass Sand Shed	21B45	4070	11/28	13	3.7	11.0	6.4
			12/13	35	9.7	19.5	11.2
			12/27	51	15.3	21.9	15.3
			1/29	60	17.8	28.9	26.8
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	1/29	25	6.6	12.8	12.2
Beaver Pass	21A01	3680	1/29	28	8.3	19.0	24.4
Brown Top Ridge +	21A28a	6000	1/29	69	21.1	43.6	48.0
Cloudy Pass +	20A22a	6500	1/28	67	20.1	-	30.0
Devils Park	20A04	5900	1/30	61	18.3	35.6	34.0
Freezeout Creek Trail	20A01	3500	1/29	22	5.5	9.6	11.5
Freezeout Meadows New	20A38	5000				20.9	28.2
Granite Creek	21A29A	3500	1/29	38	9.4	13.5	16.3
Harts Pass	20A05A	6500	1/30	59	18.4	37.1	34.5

Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND, OREGON 1973

SNOW DATA TO FEBRUARY 1, 1979 - APPENDIX 9

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Data of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
SKAGIT RIVER (Cont.)							
Klesilkwa	35B-Can	3700	1/30	28	6.3	12.6	10.0*
Lyman Lake	20A23A	5900	1/28	84	25.2	53.3	39.7
Meadow Cabins	20A08	1900	1/30	25	7.1	7.2	6.9
New Hozomeen Lake	21A30	2800	1/29	23	5.6	8.2	10.5
New Tashme	26A-Can	2500	1/31	31	5.7	9.7	8.5*
Rainy Pass	20A09	4780	1/30	51	15.4	37.6	30.9
Thunder Basin	20A07	4200	1/30	42	11.8	16.0	17.4
BAKER RIVER							
Dock Butte +	21A11A	3800	1/25	90	31.0	-	47.4
Easy Pass +	21A07A	5200	12/28	32	9.0	36.0	32.8
			1/25	44	15.0	53.0	51.7
Jasper Pass +	21A06A	5400	12/28	95	28.0	38.0	44.6
			1/25	89	35.0	72.0	69.3
Marten Lake	21A09A	3600	12/28	90	27.0	28.0	36.6
			1/25	108	38.0	-	55.4
Mt. Blum +	21A18a	5800	12/28	50	15.0	23.0	33.1
			1/25	44	15.0	42.0	48.4
Panorama New	21A26	4300	1/15	56	18.8	38.9	38.9
			1/28	53	18.2	48.0	48.7
Schreibers Meadow	21A10A	3400	12/28	52	16.0	17.0	26.0
			1/25	64	22.0	-	41.0
S. F. Thunder Creek +	21A14A	2200	1/25	16	6.0	0.0	10.0
Watson Lakes	21A08A	4500	12/28	66	19.0	22.0	29.4
			1/25	72	25.0	37.0	44.4
NOOKSACK RIVER							
Glacier Creek	21A23	3700	11/28	4	1.0	6.9	6.9
			1/29	44	13.0	-	19.7
Panorama New	21A26	4300	1/15	56	18.8	38.9	38.9
			1/28	53	18.2	48.0	48.7
O L Y M P I C P E N I N S U L A							
DUNGENESS RIVER							
Deer Park	23B04	5200	1/29	35	9.1	10.1	15.2
MORSE CREEK							
Cox Valley	23B14	4500	1/28	81	14.8	22.6	29.1
ELWHA RIVER							
Hurricane	23B03	4500	1/28	29	7.8	9.1	16.4

\# Average based on 1963-77 average

\+ Snow water equivalent estimated from aerial stadia observation

* Average for years of record

USDA SCS PORTLAND OREGON 1973

PRECIPITATION STORAGE GAGES

Amount of precipitation in inches that has accumulated since the previous measurement.

BAW FAW PEAK

Not reported

BIG BOULDER CREEK

11/8/77	
7/6/78	24.75
7/13/78	1.13
8/21/78	.09
10/3/78	3.10

BUMPING RIDGE

6/9/77	
8/22/78	39.12
9/14/78	3.25

CANTON CREEK

9/28/77	Recharge
10/13/77	0.1
11/4/77	3.5
11/29/77	6.3
12/5/77	5.3
12/7/77	1.3
2/2/78	7.6
2/14/78	0.7
3/2/78	0.8
3/14/78	1.0
3/20/78	0.0
4/10/78	1.3
4/26/78	1.7
5/15/78	1.8
6/5/78	1.4
6/28/78	0.7
8/1/78	0.2
8/28/78	1.0
9/27/78	3.1
11/1/78	1.1
1/31/79	17.9

CARNATION 15E

10/8/77	
11/2/77	5.96
12/13/77	24.29
3/4/78	36.85
4/4/78	8.30
5/2/78	5.33
6/3/78	8.52
7/1/78	3.83
8/16/78	6.60
9/5/78	4.69
10/3/78	9.37
11/4/78	6.61

CEDAR FALLS 4SE

10/4/77	
11/2/77	9.58
12/5/77	28.76
3/2/78	26.84
4/4/78	7.88
5/2/78	6.60
6/1/78	9.16
7/5/78	2.77
8/7/78	2.34
8/17/78	6.60
9/5/78	7.24
11/2/78	3.41

CEDAR FALLS 5SE

10/3/77	
11/2/77	3.62
12/5/77	18.96
3/1/78	21.51
3/31/78	5.11
5/2/78	4.26
5/31/78	7.24
7/5/78	2.35
8/11/78	2.13
9/6/78	4.26
10/2/78	6.18
11/3/78	2.98

CEDAR FALLS 7SE

10/3/77	
11/2/77	9.37
12/5/77	28.11
3/1/78	28.33
4/3/78	7.24
5/1/78	5.76
5/30/78	7.45
7/5/78	3.20
8/15/78	3.83
9/5/78	4.05
10/2/78	7.03
11/2/78	2.76

CEDAR FALLS 7SSE

10/4/77	
11/2/77	9.80
3/2/78	63.47
4/4/78	7.23
5/2/78	7.24
6/1/78	7.67
7/5/78	2.13
8/15/78	5.11
9/5/78	1.49
10/2/78	6.39
11/2/78	3.20

CEDAR FALLS 8SE

10/3/77	
11/1/77	6.39
12/12/77	31.31
3/1/78	14.91
4/3/78	5.54
5/2/78	5.11
5/30/78	6.39
7/5/78	2.98
8/11/78	1.49
9/15/78	4.68
10/2/78	6.17
11/2/78	1.28

CEDAR FALLS 10SE

10/3/77	
11/2/77	11.29
12/5/77	36.28
4/3/78	35.36
5/2/78	6.82
5/30/78	7.88
7/5/78	4.26
8/15/78	4.26
9/5/78	3.40
10/2/78	7.46
11/2/78	3.19

PRECIPITATION STORAGE GAGES (Continued)

CONSULTANT CREEK

10/8/77	
11/2/77	7.65
12/3/77	22.05
4/4/78	44.10
5/2/78	7.20
6/3/78	8.32
7/1/78	4.04
8/16/78	10.36
9/5/78	4.50
10/3/78	9.22
11/4/78	9.44

DRY CREEK

10/8/77	
11/2/77	7.64
3/4/78	57.38
4/4/78	8.78
5/2/78	6.98
6/3/78	6.98
7/1/78	4.06
8/17/78	10.57
9/5/78	4.72
10/3/78	9.22
11/4/78	11.02

FROZEN MOUNTAIN

10/8/77	
3/4/78	70.43
4/4/78	8.77
5/2/78	6.76
6/3/78	9.46
7/1/78	4.96
8/17/78	8.10
9/5/78	2.15
10/3/78	12.93
11/4/78	9.22

GLACIER CREEK

10/7/77	
6/1/78	89.50
10/5/78	19.55

GRASS MTN. #1

9/28/77	
11/4/77	3.5
12/7/77	15.7
2/10/78	9.4
3/20/78	3.7
4/10/78	0.4
5/19/78	4.5
6/5/78	1.1
6/28/78	1.1
8/1/78	0.4
8/28/78	1.8
9/27/78	3.2
10/3/78	0.2
11/1/78	1.3
12/13/78	9.9
1/31/79	6.3

GREEN RIVER II

9/26/77	
10/5/77	0.3
11/3/77	0.2
11/30/77	4.3
12/9/77	4.3
12/15/77	2.1
1/6/78	0.9
2/7/78	1.2
2/16/78	0.2
3/2/78	0.4
3/29/78	0.9
4/19/78	0.7
7/31/78	3.2
9/27/78	2.2
10/5/78	0.2
11/27/78	3.2

LESTER 5NNE

10/4/77	
11/1/77	7.02
5/31/78	74.55
7/5/78	2.99
8/17/78	2.55
9/6/78	2.77
10/2/78	5.96
11/2/78	1.49

LESTER 7NNW

10/4/77	
12/2/77	42.18
3/31/78	21.72
5/3/78	4.90
5/31/78	7.03
7/5/78	2.13
8/14/78	1.49
9/6/78	4.90
10/3/78	4.68
11/2/78	2.35

LESTER 8N

10/4/77	
11/1/77	7.67
4/5/78	65.18
5/3/78	5.75
5/30/78	8.09
7/5/78	2.34
8/14/78	1.49
9/6/78	3.83
10/2/78	6.82
11/2/78	1.70

LESTER 8NNW

10/4/77	
11/1/77	7.03
12/12/77	38.98
3/1/78	15.98
3/31/78	6.18
5/3/78	4.26
5/30/78	7.24
8/14/78	Recharge
9/6/78	3.20
10/13/78	5.11
11/2/78	1.91

LESTER 10NNW

10/4/77	
11/1/77	8.52
12/5/77	30.03
3/1/78	25.14
4/3/78	6.38
5/1/78	5.54
6/7/78	8.31
7/6/78	4.26
8/17/78	0.85
9/5/78	5.11
10/3/78	7.24
11/3/78	3.84

PRECIPITATION STORAGE GAGES (Continued)

LESTER 11NW

10/3/77	
11/1/77	7.03
12/12/77	34.72
3/1/78	16.40
4/3/78	6.39
5/3/78	5.54
5/30/78	7.67
7/6/78	4.04
8/11/78	0.22
9/6/78	4.90
10/2/78	6.39
11/3/78	2.77

MIDDLE FORK NOOKSACK

10/6/77	
5/31/78	91.85
10/5/78	18.50

MIDDLE FORK TAYLOR

10/3/77	
11/3/77	7.25
12/1/77	17.25
3/2/78	31.10
3/31/78	6.17
5/1/78	8.31
6/4/78	7.88
7/1/78	2.34
8/4/78	2.77
9/5/78	2.55
10/1/78	10.23
11/1/78	1.70

MT. INDEX

10/8/77	
11/2/77	9.00
3/4/78	65.03
4/4/78	8.78
5/2/78	13.05
6/3/78	4.04
7/1/78	4.73
8/17/78	9.68
9/5/78	5.62
10/3/78	9.90
11/4/78	9.22

MORSE LAKE

6/10/77	
7/12/78	86.25
8/22/78	2.50

NORTH FORK TAYLOR

10/3/77	
11/3/77	5.97
12/1/77	11.28
3/2/78	26.84
3/31/78	6.39
5/1/78	8.31
6/4/78	5.96
7/1/78	2.56
8/4/78	2.56
9/5/78	4.48
10/1/78	8.52
11/4/78	7.89

PARK CREEK RIDGE

10/4/77	
10/11/78	64.75

PORT ANGELES 11S

9/15/77	
8/16/78	40.10

RUSTY CREEK

1/27/78	
2/24/78	5.40
3/29/78	2.90
4/27/78	5.70
5/30/78	1.80
6/27/78	1.80
7/31/78	3.40
8/29/78	2.75
9/29/78	8.30
10/30/78	0.20
11/28/78	1.15
12/29/78	0.55
1/31/79	0.70

SALMON MEADOWS

1/27/78	
2/23/78	6.00
3/29/78	2.90
4/26/78	6.00
5/30/78	2.50
6/27/78	0.80
7/31/78	3.20
8/29/78	2.00
9/29/78	3.25
10/30/78	0.50
11/29/78	1.00
12/29/78	0.75
1/30/79	1.00

SPRUCE SPRINGS

10/1/77	
10/1/78	44.05

SKYKOMISH 7½W

10/5/77	
6/6/78	136.10
7/8/78	3.62
8/21/78	8.52
9/9/78	4.90
9/30/78	10.65

TAYLOR CREEK

10/3/77	
11/3/77	4.69
12/1/77	11.29
3/2/78	22.15
3/31/78	5.54
5/1/78	7.45
6/4/78	6.82
7/1/78	1.28
8/4/78	1.49
9/5/78	3.83
10/1/78	-14.91
11/1/78	13.21

TROUGH # 2

11/8/77	
9/20/78	31.00

TRUCK HILL

Vandalized - No record	
8/18/78	
11/4/78	24.75

UPPER WHEELER

1/27/78	
2/26/78	3.15
3/27/78	3.40
4/29/78	3.00
5/29/78	1.20
6/30/78	1.30
7/28/78	0.00
8/29/78	0.10
9/30/78	1.80
10/31/78	Recharge
11/30/78	3.20
12/31/78	1.50
1/30/79	1.40

PRECIPITATION STORAGE GAGES (Continued)

YELLOW CREEK

10/8/77	
11/2/77	6.98
12/3/77	13.06
3/4/78	23.40
4/4/78	6.74
5/2/78	7.43
6/3/78	6.08
7/1/78	2.26
8/18/78	6.97
9/5/78	3.60
10/3/78	6.74
11/4/78	6.76

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
  Corps of Engineers
U. S. Department of Agriculture
  Forest Service
U. S. Department of Commerce
  NOAA, National Weather Service
U. S. Department of the Interior
  Bonneville Power Administration
  Bureau of Reclamation
  Geological Survey
  National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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"The Conservation of Water begins with the Snow Survey"

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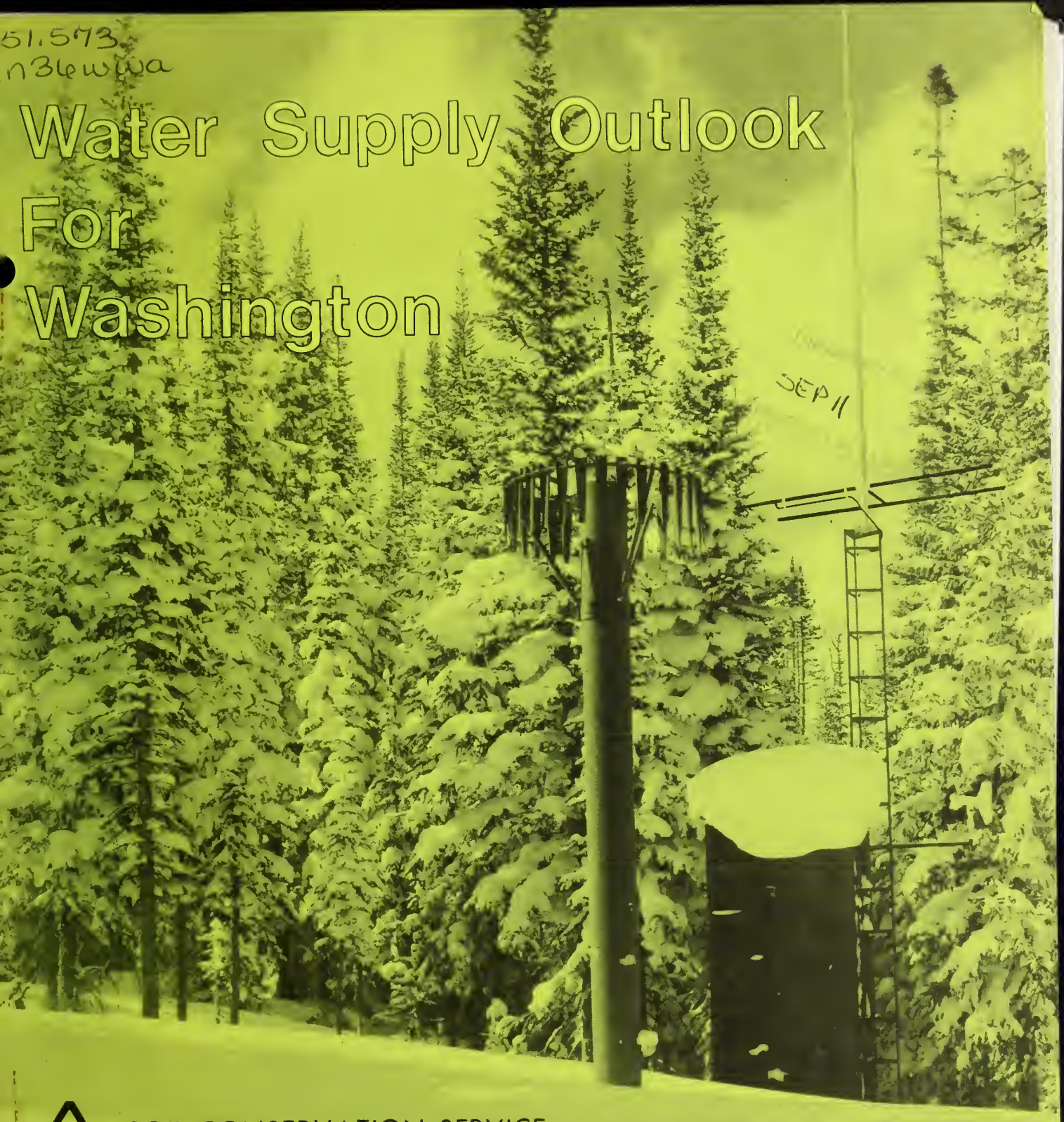
Water Supply Outlook For Washington

SEP 11



SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
MAR. 1, 1979

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly ar semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and sail moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: VIEW OF A SNOTEL DATA SITE IN THE SNOWY RANGE IN WYOMING. TALL CYLINDRICAL DEVICE IS A PRECIPITATION GAGE. SNOW PILLOWS ON THE GROUND NOT VISIBLE DUE TO SNOW COVER. SHELTER HOUSE, ANTENNA TOWER, ANTENNA, AND TEMPERATURE UNIT ARE VISIBLE BEHIND THE PRECIPITATION GAGE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Partland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

USDA-SCS-PORTLAND, OR. 1978

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

R.M. DAVIS

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON D C

Released by

GALEN S. BRIDGE

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

WILBUR G. HALLAUER

DIRECTOR
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

Report prepared by

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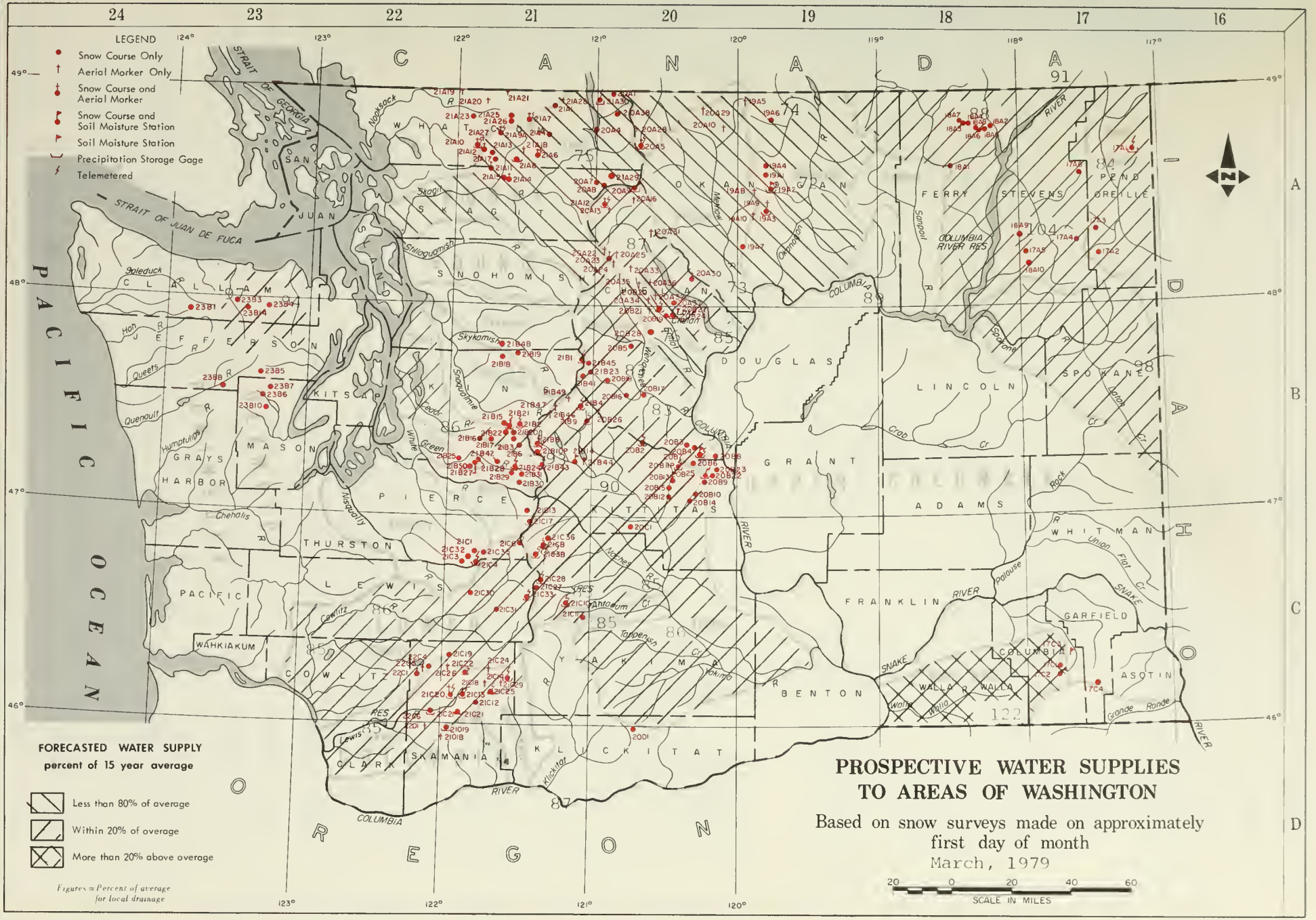

LEGEND
Snow Course Only
Aerial Marker Only
Snow Course and Aerial Marker
Snow Course and Soil Moisture Station
Soil Moisture Station
Precipitation Storage Gage
Telemetered
FORECASTED WATER SUPPLY
percent of 15 year average
Less than 80% of average
Within 20% of average
More than 20% above average
Figures = Percent of average for local drainage
PROSPECTIVE WATER SUPPLIES TO AREAS OF WASHINGTON
Based on snow surveys made on approximately first day of month
March, 1979
SCALE IN MILES
CANADA
IDAHO
OREGON
PACIFIC OCEAN
STRAIT OF GEORGIA
STRAIT OF JUAN DE FUCA
SAN JUAN
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
OKANOGAN
FERRY
STEVENS
PEND OREILLE
CLALLAM
JEFFERSON
KITSAP
KING
DOUGLAS
LINCOLN
SPOKANE
GRAYS HARBOR
MASON
PIERCE
KITTITAS
GRANT
ADAMS
WHITMAN
THURSTON
LEWIS
PACIFIC
WAHKIAKUM
COWLITZ
YAKIMA
FRANKLIN
GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
BENTON
CLARK
SKAMANIA
KLICKITAT
COLUMBIA RIVER RES
COLUMBIA RIVER
SNAKE RIVER
Nooksack
Skagit
Stillaguamish
Skykomish
Snoqualmie
Cedar
White
Green
Nisqually
Chehalis
Cowlitz
Lewis
Klickitat
Yakima
Tapenish
Ahtanum
Naches
Wenatchee
Methow
Okanogan
Sanpoil
Spokane
Crab
Rock
Palouse
Union Flat
Grande Ronde
Walla Walla
Hoh
Queets
Quenault
Humptulips
Soleduck
Sanpoil
Lake Chelan
24
23
22
21
20
19
18
17
16
A
B
C
D
124°
123°
122°
121°
120°
119°
118°
117°
49°
48°
47°
46°

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snaw Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Calville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Taga	18A10	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clork	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Muttan Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salman Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Tauts Caulee	19A6	30	39N	25E	2845
Methaw River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dallar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5AP	7	37N	18E	6500
Harseshae Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	18	34N	16E	4600
Petersans	20A16a	3	34N	17E	3730
Rainy Pass	20A9P	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20B2Ba	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Faur Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2P	35	22N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leovenworth R. S.	20817	1	24N	17E	1127
Merritt	20818	4	26N	16E	2140
Stevens Pass	21B1P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	20N	20E	5310

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Calackum Creek					
Calockum Creek Upper	20B22	11	20N	20E	5300
Calackum Creek Lower	20B23	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Vista	20B4	18	21N	20E	3400
Stemilt Creek					
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9P	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Calackum Pass	20B9	25	20N	20E	5370
Caake Creek	20B10	17	19N	20E	4123
Domery Flat	21B44m	15	20N	14E	2200
Fish Lake	21B4P	28	24N	14E	3371
Green Lake	21C10P	3	12N	13E	6000
Grause Camp	20B11P	29	21N	19E	5385
High Creek	20812	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21B47a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17P	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8P	13	21N	11E	2450
Van Epps Pass	20B26a	16	23N	15E	5925
Walters Flat	20815	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28P	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500

LOWER COLUMBIA DRAINAGE

Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Mill Creek					
Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
White Salmon River					
Cultus Creek	21C12	35	7N	8E	4000
Lewis River					
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21P	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C1Ba	24	9N	9E	4200
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25P	28	8N	9E	3500

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Lewis River (cantinued)					
Lone Pine Shelter	21C26P	8	9N	7E	3800
Marble Mauntain	22C5a	24	8N	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldman Pass	21D19P	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20aP	16	8N	7E	3400
Surprise Lakes	21C13AP	14	7N	8E	4250
Table Mauntain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Mosquita Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33P	11	13N	11E	5900
Potata Hill	21C14P	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

Nisqually River					
Ghast Farest	21C4P	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	8E	5500
Stem Glade	21C1	13	15N	8E	5050
White River					
Corral Pass	21813	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21825	27	21N	8E	1200
Cougar Mountain	21842SP	21	21N	9E	3200
Grass Mountain No. 2	21827	14	20N	8E	2900
Grass Mountain No. 3	21828	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21810P	25	21N	11E	3860
Twin Camp	21830	18	19N	11E	4100
Cedar River					
City Cabin	2183	10	21N	10E	2390
Mt. Gardner	21821P	30	22N	10E	3300
Mt. Gardner Aux.	21822	31	22N	10E	2500
Mt. Lindsay	21816	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fark Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400
Snoquolmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
South Fork Tolt	21818	26	26N	9E	1900
Skykomish River					
Lake Elizabeth	21B19	33	26N	10E	2900

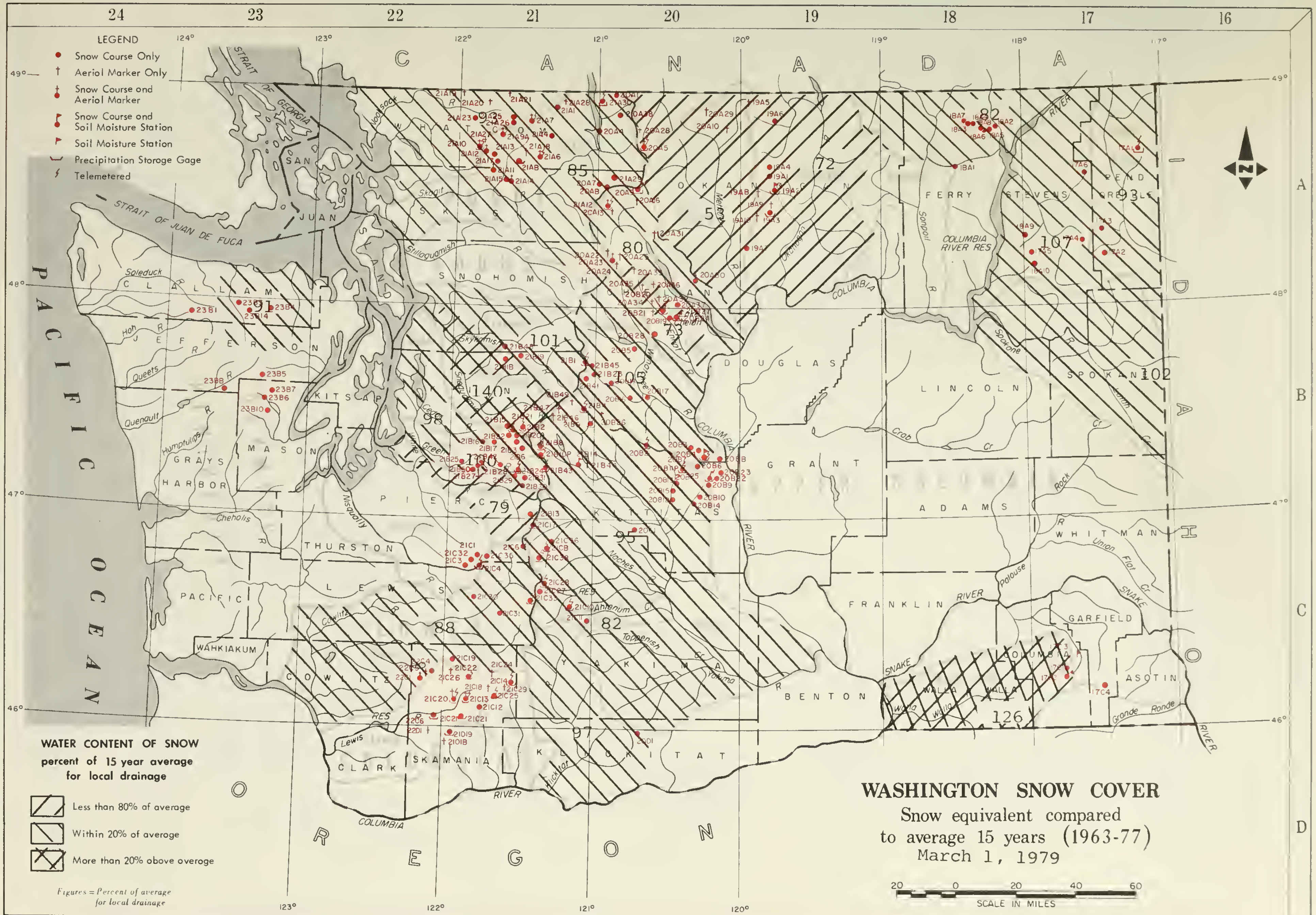
NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeaut Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadaws Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30P	10	35N	14E	4200
Baker River					
Baker Pass	21A27a	1	37N	7E	4900
Dack Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Koma Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Racky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Naaksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Conyon	21A20A	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

OLYMPIC PENINSULA

Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cax Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skakomish River					
Black and White	2387	17	24N	5W	4200
Black and White Lakes	2386	16	24N	5W	4700
Faur Stream	23B10	1	23N	6W	3000
Home Sweet Home	2385	28	25N	5W	5200
Sundown Pass	2388	25	24N	7W	3900
Soleduck River					
Deer Lake	2381	14	28N	9W	3900

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow



WASHINGTON SNOW COVER
Snow equivalent compared
to average 15 years (1963-77)
March 1, 1979
LEGEND
Snow Course Only
Aerial Marker Only
Snow Course and Aerial Marker
Snow Course and Soil Moisture Station
Soil Moisture Station
Precipitation Storage Gage
Telemetered
WATER CONTENT OF SNOW
percent of 15 year average
for local drainage
Less than 80% of average
Within 20% of average
More than 20% above average
Figures = Percent of average for local drainage
SCALE IN MILES
20 0 20 40 60
CANADA
IDAHO
OREGON
PACIFIC OCEAN
STRAIT OF GEORGIA
STRAIT OF JUAN DE FUCA
CLALLAM
JEFFERSON
KITSAP
MASON
GRAYS HARBOR
PACIFIC
WAHKIAKUM
COWLITZ
CLARK
SKAMANIA
LEWIS
THURSTON
PIERCE
KING
SNOHOMISH
SKAGIT
WHATCOM
OKANOGAN
CHELAN
KITTITAS
YAKIMA
KLICKITAT
DOUGLAS
GRANT
BENTON
FRANKLIN
ADAMS
LINCOLN
FERRY
STEVENS
PEND OREILLE
SPOKANE
WHITMAN
GARFIELD
COLUMBIA
WALLA WALLA
ASOTIN
COLUMBIA RIVER
SNAKE RIVER
COLUMBIA RIVER RES
91
85
72
82
93
107
102
80
53
73
101
105
140
98
110
79
95
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88
97
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INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cobin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Cops Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sonpoil River					
Shermon Creek Poss	18A1	19	36N	35E	5350
Okanogan River					
Clork	19A8a	2	36N	23E	7000
Muckomuck	19A9o	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Poysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Storvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methow River					
Billy Goat Poss	20A10a	10	38N	20E	6400
Dollar Watch	20A29o	8	39N	20E	7000
Harts Poss	20A5AP	7	37N	18E	6500
Horseshoe Basin	19A5o	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelon Lake Bosin					
Cloudy Poss	20A22o	12	31N	15E	6500
Greenwood Flot	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lymon Lake	20A23a	18	31N	16E	5900
Pork Creek Flot	20A13a	19	34N	16E	2220
Pork Creek Ridge	20A12A	18	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9P	21	35N	17E	4780
Safety Horbor	20A30A	32	31N	20E	6300
Wor Creek Poss	20A31o	34	33N	18E	6500
Entiot River					
Blue Creek G.S.	20B28a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiot Meodows	20A33a	28	31N	17E	4540
Entiot River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Comp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shody Poss	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21o	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21823	7	26N	15E	3170
Berne-Mill Creek (New)	21841SP	13	26N	14E	3240
Blewett Poss No. 2	20B2P	35	22N	17E	4270
Chiwoukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	2085	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Poss	21B1P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	29N	20E	5310

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Colockum Creek					
Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20B23	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Visto	20B4	18	21N	20E	3400
Stemilt Creek					
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400
Yokimo River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9P	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Colockum Poss	20B9	25	20N	20E	5370
Cooke Creek	20B10	17	19N	20E	4123
Domery Flot	21B44m	15	20N	14E	2200
Fish Lake	21B4P	28	24N	14E	3371
Green Lake	21C10P	3	12N	13E	6000
Grouse Camp	20B11P	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21847o	7	23N	13E	3327
Monostosh	20C1	24	17N	16E	3935
Morse Lake	21C17P	6	16N	11E	5400
Nonum	20B13	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8P	13	21N	11E	2450
Von Epps Pass	20B26a	16	23N	15E	5925
Wolters Flot	20B15	22	20N	19E	3360
Waptus Lake	21849o	12	23N	13E	3024
White Pass (East Side)	21C28P	2	13N	11E	4500
White Poss (Leach Lake)	21C27	1	13N	11E	4500

LOWER COLUMBIA DRAINAGE

Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Mill Creek					
Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Klickitot River					
Sotus Pass	20D1	21	6N	17E	4030
White Solmon River					
Cultus Creek	21C12	35	7N	8E	4000
Lewis River					
Blue Lake	21C22o	19	9N	8E	4800
Bob's Trail	21C21P	25	8N	7E	2200
Colomity Ridge	22D1o	8	5N	5E	2500
Council Poss	21C18a	24	9N	9E	4200
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25P	28	8N	9E	3500

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Lewis River (continued)					
Lone Pine Shelter	21C26P	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldmon Poss	21D19P	22	6N	7E	3100
Plains of Abrahom	22C1o	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20aP	16	8N	7E	3400
Surprise Lakes	21C13AP	14	7N	8E	4250
Toble Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cowlitz River					
Coyuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Ohanopecosh	21C32	28	15N	10E	2200
Pockwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33P	11	13N	11E	5900
Potato Hill	21C14P	36	10N	10E	4500
Willome Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

Nisqually River					
Ghost Forest	21C4P	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Poradise Park (New)	21C35	13	15N	8E	5500
Stem Glode	21C1	13	15N	8E	5050
White River					
Corral Poss	21813	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Chorley Creek	21825	27	21N	8E	1200
Cougor Mountain	21842SP	21	21N	9E	3200
Grass Mountain No. 2	21827	14	20N	8E	2900
Grass Mountain No. 3	21828	12	20N	8E	2100
Lester Creek	21829	36	20N	10E	3100
Lynn Lake	21850	22	20N	8E	4000
Sowmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21843SPp	14	20N	11E	5000
Stampede Poss	21810P	25	21N	11E	3860
Twin Camp	21830	18	19N	11E	4100
Cedor River					
City Cabin	2183	10	21N	10E	2390
Mt. Gardner	21821P	30	22N	10E	3300
Mt. Gardner Aux.	21822	31	22N	10E	2500
Mt. Lindsay	21816	31	22N	9E	2500
Mt. Washington	21815	8	22N	9E	3000
Rex River	21817	11	21N	9E	2400
South Fork Cedar	2186	24	21N	10E	3000
Tinkhom Creek	21820	1	21N	10E	3400
Snoquolmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Ollollie Meadows	21B2P	19	22N	11E	3625
South Fork Tolt	21818	26	26N	9E	1900
Skykomish River					
Lake Elizobeth	21B19	33	26N	10E	2900

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Skagit River					
Beover Creek Trail	21A4	35	39N	12E	2200
Beover Poss	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Pork	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meodows (New)	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meodows Cobins	20A8	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30P	10	35N	14E	4200
Boker River					
Baker Poss	21A27o	1	37N	7E	4900
Dock Butte	21A11A	8	36N	8E	3800
Eosy Poss	21A7A	19	39N	11E	5200
Josper Poss	21A6A	17	38N	11E	5400
Komo Kulshon	21A17	31	37N	9E	800
Morten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meodow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Nooksock River					
Bald Mountain	21A19o	7	40N	7E	4400
Conyon	21A20A	20	40N	8E	5100
Glocier Creek	21A23	9-10	38N	7E	3700
Ponoramo New	21A26	17	39N	9E	4300
Ponoramo Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21o	16	40N	9E	5200

OLYMPIC PENINSULA

Dungeness River					
Deer Pork	2384	1	28N	5W	5200
Morse Creek					
Cox Volley	23814	31	29N	6W	4500
Elwho River					
Hurricone	2383	36	29N	7W	4500
Skokomish River					
Block ond White	2387	17	24N	5W	4200
Block ond White Lakes	2386	16	24N	5W	4700
Four Streom	23810	1	23N	6W	3000
Home Sweet Home	2385	28	25N	5W	5200
Sundown Pass	2388	25	24N	7W	3900
Soleduck River					
Deer Lake	2381	14	28N	9W	3900

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington

March 1, 1979

There has been a dramatic change in the water supply outlook in the state of Washington and tributary basins since the first of February. The snow pack has increased nearly 30 percent throughout the area. Snow cover at the current time ranges from a low of 47 percent below normal to a high of 40 percent above and the forecasts have all been raised accordingly, although not to the same extent. The low elevation snow pack is still better, percentagewise, than the high elevation snow pack; but with the current warming trend, this should change dramatically during the month of March. Rainfall, which had been subnormal all winter, was well above normal - ranging from 11 to 75 percent greater than average. The storm pattern which started on February 3 continued most of the month and is the reason for this great improvement in water supply.

SNOW COVER

Last month we had a snow pack that ranged from 76 percent below normal to 30 percent below normal in the Upper Columbia Basin. This range now is from 47 percent below normal to 5 percent above. This amount of increase is greater than any that can be recalled in the recent history of the Snow Survey Program. As stated above, the low elevation snow packs still have a greater amount of water, percentagewise, than at the upper elevations and this is dramatically shown in the Snoqualmie River Drainage. Four snow courses were measured in this area. The three high elevation snow courses have an average water equivalent that is near normal, but the one low elevation snow course now stands at 169 percent greater than average. Although there is not as much water at this location, it accounts for a greater area of the watershed. The basin average is 40 percent above normal. A similar situation is in the Lower Columbia Drainage in the Mill Creek Watershed. The three snow courses in this area indicate the snow pack to be 26 percent above normal. Over the Olympic Peninsula, the snow pack is 85 percent of normal.

RESERVOIRS

The irrigation reservoirs in the Yakima Basin have less water in storage now than at any time since 1970; but with the expected runoff, these reservoirs should fill. The two small reservoirs in the Okanogan area, Conconully and Salmon Lake, both have well above normal amounts of water in storage and are in excellent shape for this time of year. The power reservoirs are not quite as good; but, with careful management and conservation of water, the expected runoff should fill these reservoirs.

PRECIPITATION

As stated previously, winter rainfall has been well below normal since the first of November. The trend has reversed in February. Precipitation in the Columbia Drainage Division above Castlegar was reported 77 percent above normal; northeastern Washington was 75 percent above, while the southeastern portion was 62 percent above. The eastern slopes of the Cascades had precipitation that was only 11 percent above normal. This was the lowest increase in the state. On the western slopes of the Cascades, precipitation ranged from 37 to 56 percent greater than average.

STREAMFLOW

In spite of this above normal precipitation, river flows were generally subnormal during the month of February. Only the Green, Palouse, Walla Walla, and Cowlitz Rivers experienced above average outflows. Forecasts of streamflow now range from a low of 65 percent of normal to a high of 22 percent above normal. This is a 10 to 15 percent, overall, increase from that which was reported last month. Numerical forecasts can be found following this narrative.

STREAMFLOW FORECASTS - FEBRUARY 1979

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. Streamflow figures for 1978 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1979	% 15-yr. Avg.	Seasonal Streamflow in Thousands of Acre-Feet: Fore-cast period	1978	1977	1976	15-Yr Average 63-77
COLUMBIA BASIN							
COLUMBIA RIVER SYSTEM **							
Columbia River	41400	91	Apr-Sept	44008	31562	53969	45502
at Birchbank 1/	33100	91	Apr-July	34030	23812	38930	36353
	23800	91	Apr-June	24082	18026	25889	26194
Columbia River	60300	89	Apr-Sept	66868	41056	81878	68012
at Grand Coulee 1/	50700	89	Apr-July	54559	32018	63543	57035
	39400	89	Apr-June	41585	25623	47065	44273
Columbia River	66300	90	Apr-Sept	72892	43415	87384	73935
bl. Rock Island Dam 1/	56300	90	Apr-July	60163	34253	68404	62462
	43600	90	Apr-June	46242	27563	50696	48489
Columbia River	89700	87	Apr-Sept	101055	54092	120643	103493
At The Dalles, OR 1/	77000	87	Apr-July	84815	42940	97836	88519
	62000	87	Apr-June	67353	35524	77318	71237
PEND OREILLE RIVER SYSTEM **							
Pend Oreille River	13400	84	Apr-Sept	15581	4130	16946	15950
bl. Box Canyon	12300	84	Apr-July	14080	2715	15271	14690
	9900	84	Apr-June	11750	2261	11814	11760
KETTLE RIVER SYSTEM							
Kettle River	1620	88	Apr-Sept	-	1145	2434	1846
nr. Laurier	1530	87	Apr-July	-	1105	2112	1754
	1340	85	Apr-June	1629	1037	1826	1588
Colville River	140	104	Apr-Sept	-	26	123	134
at Kettle Falls	130	106	Apr-July	-	22	106	123
	120	104	Apr-June	-	20	98	115

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

** Forecasts made by National Weather Service, River Forecast Center, Portland, OR.

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast Period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr 63-77
SPOKANE RIVER SYSTEM ***							
Spokane River	2850	98	Apr-Sept	2427	-	3418	2910
at Post Falls, ID 2/	2760	101	Apr-July	2330	-	3275	2733
	2640	102	Apr-June	2199	-	3033	2600
OKANOGAN RIVER SYSTEM **							
Similkameen River	1130	74	Apr-Sept	1474	645	1944	1517
nr. Nighthawk	1070	76	Apr-July	1334	605	1720	1417
	920	77	Apr-June	1138	547	1347	1192
Okanogan River							
nr. Tonasket	1230	72	Apr-Sept	1693	708	2185	1719
	1140	73	Apr-July	1509	644	1836	1565
	980	75	Apr-June	1292	583	1382	1305
METHOW RIVER SYSTEM **							
Methow River	750	74	Apr-Sept		280	1205	1011
nr. Pateros	730	78	Apr-July		246	1047	937
	610	77	Apr-June		217	802	791
CHELAN RIVER SYSTEM							
Chelan River	1050	85	Apr-Sept	1804	599	1466	1237
at Chelan 3/	930	86	Apr-July	1618	481	1184	1080
	725	87	Apr-June	1307	403	836	834
Stehekin River	785	87	Apr-Sept		494	1010	904
at Stehekin	680	89	Apr-July		382	787	764
	535	92	Apr-June		311	523	578
Entiat	185	76	Apr-Sept		95	310	241
nr. Ardenvoir	170	78	Apr-July		81	266	218
	140	80	Apr-June		70	190	174
WENATCHEE RIVER SYSTEM							
Wenatchee River	1080	83	Apr-Sept		633	1510	1297
at Plain	970	84	Apr-July		542	1263	1156
	770	85	Apr-June		479	891	903
Wenatchee River	1470	83	Apr-Sept		839	2074	1767
at Peshastin	1330	84	Apr-July		730	1746	1587
	1070	86	Apr-June		753	1238	1250
Stemilt Basin	135*	98	May-Sept			144*	138*
nr. Wenatchee							
Icicle Creek	315	85	Apr-Sept				371
nr. Leavenworth	300	87	Apr-July				342
	245	88	Apr-June				279

* Thousands of Miners' Inches.

** Forecasts made by National Weather Service, River Forecast Center, Portland, OR.

*** Forecasts made by Jack A. Wilson, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr. Average 63-77
YAKIMA RIVER SYSTEM							
Yakima River	135	93	Apr-Sept	106	78	157	145
nr. Martin 4/	125	94	Apr-July	92	67	141	133
	110	96	Apr-June	83	67	117	114
Yakima River	955	90	Apr-Sept	911	493	1091	1062
at Cle Elum 5/	890	92	Apr-July	726	416	980	970
	800	95	Apr-June	636	379	807	838
Yakima River	1880	86	Apr-Sept	2059	802	2521	2168
nr. Parker 6/	1720	88	Apr-July	1691	657	2205	1954
	1490	88	Apr-June	1487	611	1810	1693
Kachess River	115	91	Apr-Sept	101	61	142	126
nr. Easton 7/	110	92	Apr-July	95	55	131	119
	100	96	Apr-June	88	53	109	104
Cle Elum River	430	90	Apr-Sept	411	250	561	479
nr. Roslyn 8/	395	91	Apr-July	369	215	484	435
	330	92	Apr-June	314	193	370	358
Bumping River	120	82	Apr-Sept	117	63	175	146
nr. Nile 9/	110	83	Apr-July	105	55	152	133
	90	85	Apr-June	89	51	109	106
American River	110	87	Apr-Sept		50	132	127
nr. Nile	100	86	Apr-July		44	116	116
	85	89	Apr-June		39	86	95
Tieton River	210	83	Apr-Sept	238	128	302	252
at Tieton Dam 10/	180	85	Apr-July	196	92	242	212
	145	86	Apr-June	156	76	179	168
Naches River	760	85	Apr-Sept	760	327	1046	890
nr. Naches 11/	690	86	Apr-July	657	275	908	802
	610	90	Apr-June	564	245	717	678
Ahtanum Creek	40	85	Apr-Sept		8	51	47
nr. Tampico 12/	35	83	Apr-July		7	45	42
	30	81	Apr-June		6	37	37

4/ Observed flow corrected for storage in Lake Keechelus.
5/ Observed flow corrected for storage in Keechelus, Kachess,and Cle Elum Lakes and diversion by Kittitas Canal.
6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.
7/ Observed flow corrected for storage in Lake Kachess.
8/ Observed flow corrected for storage in Lake Cle Elum.
9/ Observed flow corrected for storage in Bumping Lake.
10/ Observed flow corrected for storage in Rimrock Lake.
11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.
12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Forecast period	1978	1977	1976	15-Yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek	22	122	Apr-Sept		4	30	18
at Walla Walla	21	124	Apr-July		4	30	17
	20	118	Apr-July		4	30	17
Lewis River	1100	85	Apr-Sept	1134	1030	1285	1301
at Ariel 13/	950	84	Apr-July	946	832	1130	1131
	850	85	Apr-June	850	763	990	995
Cowlitz River **	1820	86	Apr-Sept		1570	2296	2125
bl. Mayfield Dam	1650	89	Apr-July		1293	1963	1853
	1430	92	Apr-June		1168	1584	1552
Cowlitz River **	2350	85	Apr-Sept	2310	2157	2924	2767
at Castle Rock 14/	2050	85	Apr-July	1886	1766	2493	2401
	1700	84	Apr-June	1616	1601	2063	2028
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River	150	94	Apr-Sept		97	160	160
nr. Sequim	125	96	Apr-July		75	128	130
	95	99	Apr-June		61	91	96
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River	1550	65	Mar-August		1155	3003	2532
at Newhalem 15/	1760	75	Apr-Sept		728	2943	2356
	1460	74	Apr-July		535	2322	1972
	1180	79	Apr-June		429	1595	1485
ELWHA RIVER SYSTEM							
Elwha River	535	97	Apr-Sept		370	614	553
nr. Port Angeles	440	97	Apr-July		295	492	454
CEDAR RIVER SYSTEM							
Cedar River nr. Cedar Falls	80	86	Apr-Sept		55	91	93

13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross and Gorge Reservoirs.
** Forecasts made by National Weather Service, River Forecast Center, Portland, OR.

RESERVOIR STORAGE - 1000 ACRE FEET

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured (March 1) 1979	1978	1977	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	70.5	134.1	17.1	121.6
Columbia	Franklin D. Roosevelt Lake	5232.0	2912.8	2027.3	2937.5	2681.2
Columbia	Banks Lake	714.9	690.8	720.3	714.9	621.3
Okanogan	Conconully Reservoir	13.0	10.0	3.1	8.4	6.7
Okanogan	Salmon Lake	10.5	10.5	6.0	9.5	7.5
Chelan	Lake Chelan	676.1	198.1	194.6	221.8	235.5
		YAKIMA				
Yakima	Keechelus Lake	157.8	78.2	148.5	79.8	105.4
Kachess	Kachess Lake	239.0	187.9	195.6	203.8	183.0
Cle Elum	Lake Cle Elum	436.9	80.0	264.2	408.3	280.2
Bumping	Bumping Lake	33.7	8.3	18.2	9.2	8.7
Tieton	Rimrock Lake	198.0	146.4	149.8	129.8	125.3
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	636.1	801.1	659.7	894.0
Skagit	Diablo Reservoir	90.6	85.0	82.9	86.6	85.2
Skagit	Gorge Reservoir	9.8	8.0	8.2	8.1	8.1

1/ Based on Active Storage

* 15-yr. average 1963-1977

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about March 1, as percent of the same date in 1978 and 1977 and average of record.

Tributary Basin	No. of Courses Average	1979 Snow Water Expressed as percent of 1978	1977	1963-77 Avg.
UPPER COLUMBIA BASIN				
Pend Oreille	15	91	364	93
Kettle	16	72	224	82
Colville	5	95	518	107
Spokane	12	113	351	102
Okanogan	38	66	235	72
Methow	6	40	632	53
Chelan	4	62	257	80
Entiat	11	58	337	73
Wenatchee	11	110	541	105
Yakima	26	94	921	95
Ahtanum	2	68	858	82
LOWER COLUMBIA BASIN				
Mill Creek	3	208	1927	126
Klickitat	1	103	733	97
Cowlitz	2	123	1049	88
PUGET SOUND				
White	2	84	570	79
Green	4	447	2321	100
Cedar	7	732	2953	98
Snoqualmie	3	187	1184	140
Skykomish	3	132	910	101
Skagit	16	102	790	85
Nooksack	5	138	465	93
OLYMPIC PENINSULA				
Elwha	1	165	925	91
Dungeness	1	126	976	91
Morse Creek	1	99	430	74

SOIL MOISTURE - MARCH

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content Inches as of March 1 1979	1978	1977
OKANOGAN							
Salmon Meadows	19A2M	4500	48	5.4	-	-	1.9
Trout Creek	3-M	3600	48	7.3	-	3.7	3.4
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	7.3	8.8	7.5
Helmers	17C2M	4400	48	12.0	9.1	8.4	9.4
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	8.1	10.8	6.9

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content (Inches) as of Oct. 1 1978	1977	1976
OKANOGAN							
Salmon Meadows	19A02M	4500	48	5.4	-	-	3.4
Trout Creek	3-M	3600	48	7.3	3.7	3.2	3.4
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	5.9	-	-
Helmers	17C2M	4400	48	12.0	8.2	-	-
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	10.3	6.6	-

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct Observed	1978 2/ Departure	WINTER Nov. 1978 - Feb. 1979 Observed	2/ Departure
Columbia in Canada	6.29	+1.27	10.93	-2.63
Pend Oreille - Spokane	2.09	-1.95	11.54	-3.48
Northeastern Washington	1.74	-0.73	6.27	-1.84
Southeastern Washington	1.22	-1.29	8.06	-0.71
Central Washington	0.60	-0.37	2.86	-1.72
North Central Washington	2.22	+0.63	3.55	-2.23
Northwest Slope Cascades	9.89	-3.32	38.19	-8.91
Southwest Slope Cascades	6.18	-2.50	23.39	-12.09

Northeastern Washington - Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.

Southeastern Washington - Touchet, Tucannon and Palouse Drainages.

Central Washington - Yakima, Wenatchee and Chelan Drainages.

North Central Washington - Methow and Okanogan Drainages.

Northwest Slope Cascades - Puget Sound Drainages.

Southwest Slope Cascades - Lower Columbia Drainages.

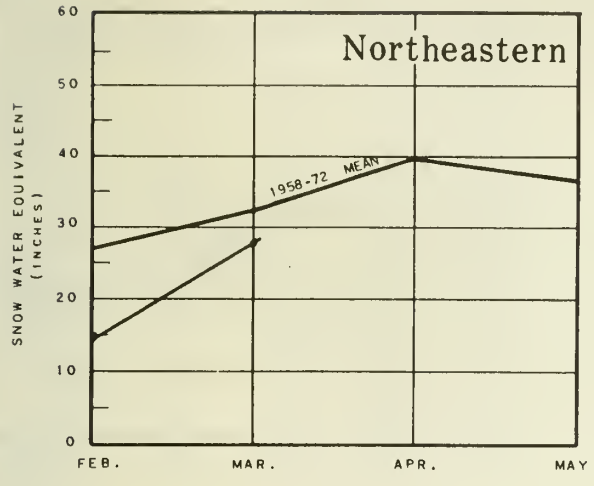
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

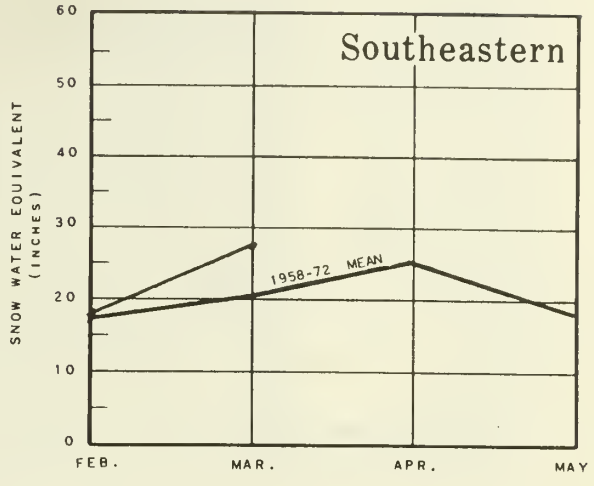
2/ - Departure from 15-year (1958-72) drainage division average.

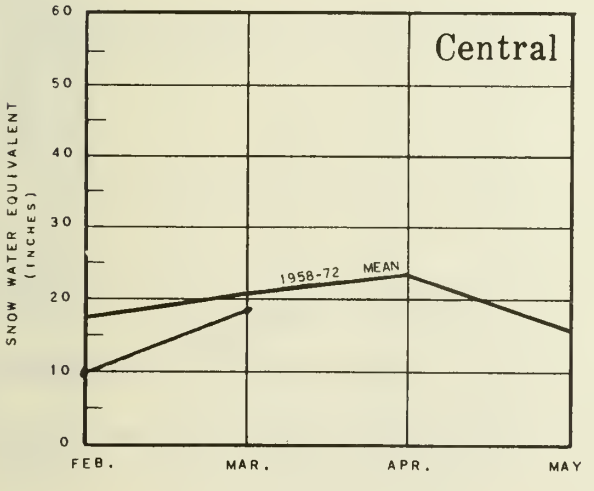
WASHINGTON SNOW COVER

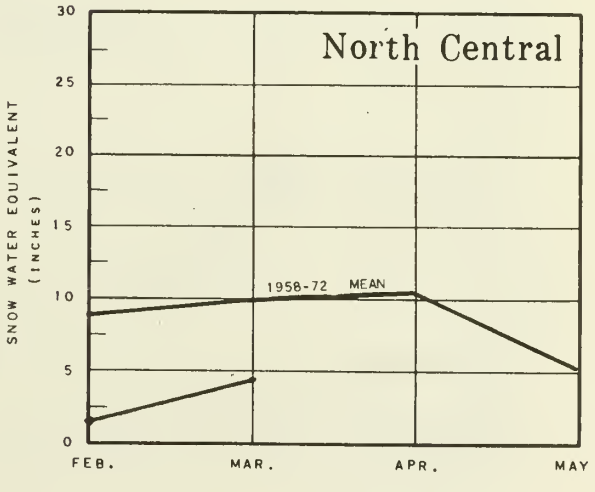
1979

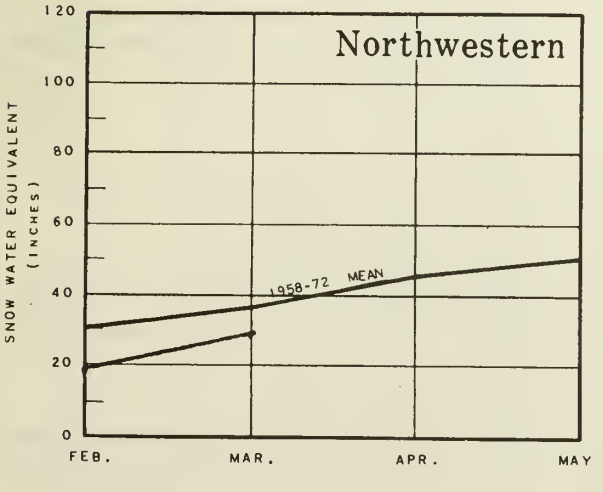
DRAINAGE AREAS

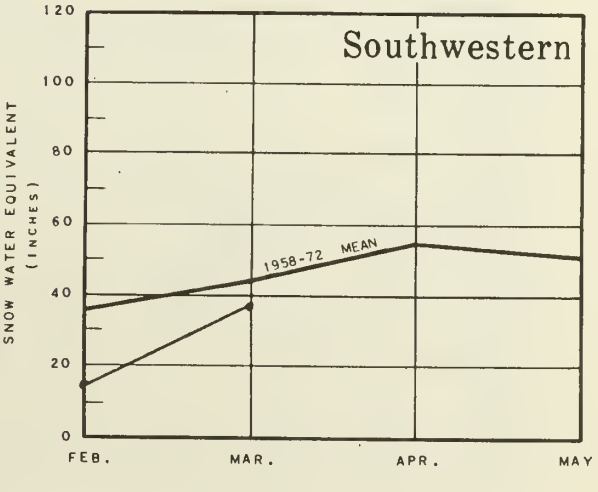










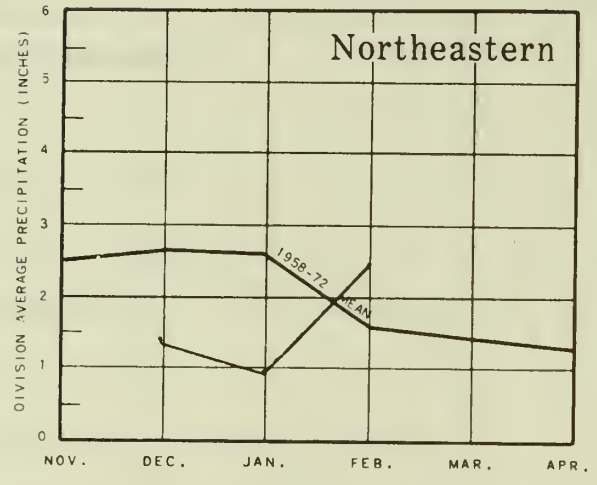


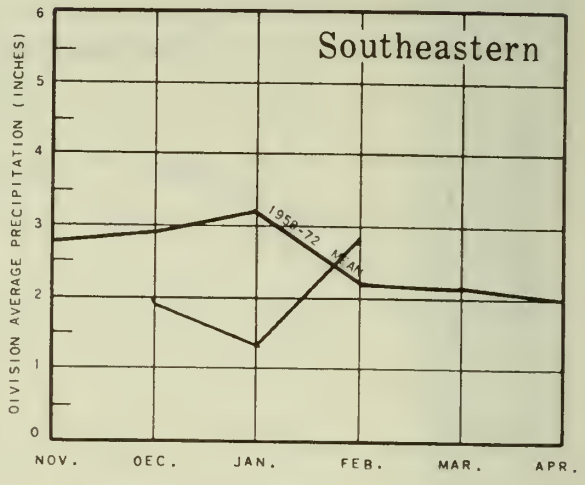
Selected Snow Survey Courses by Soil Conservation Service

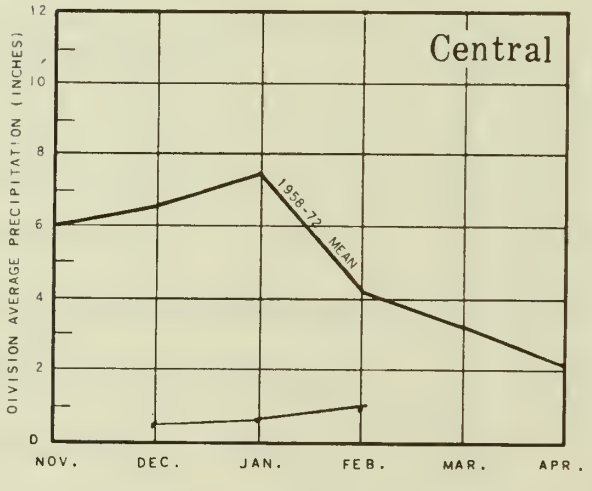
WASHINGTON VALLEY PRECIPITATION

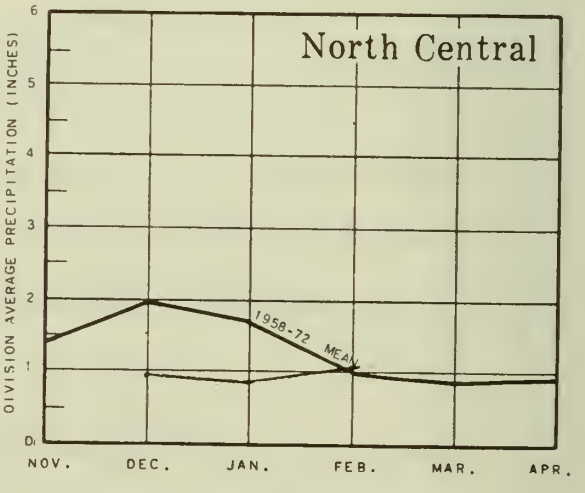
1979

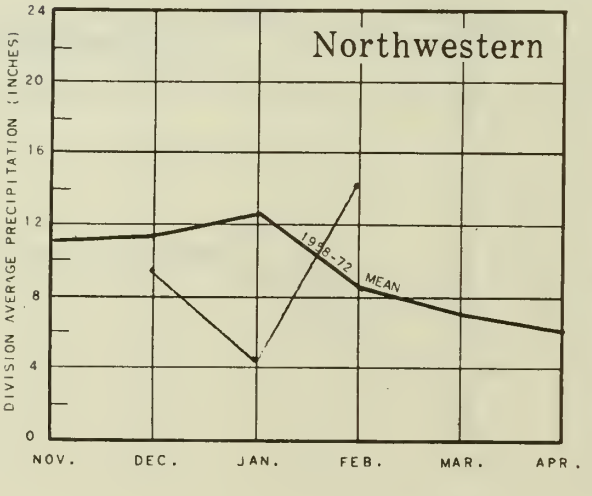
DRAINAGE AREAS

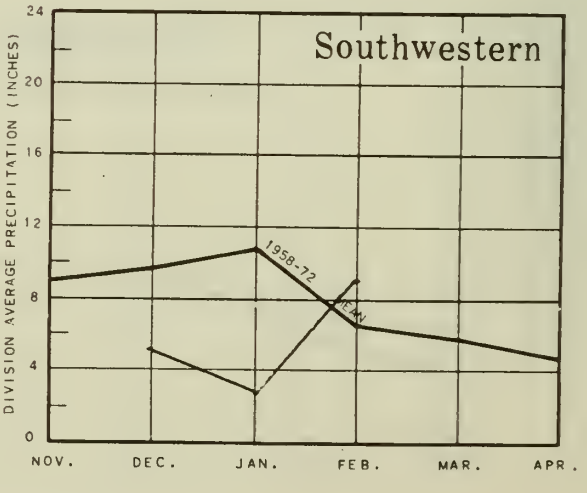












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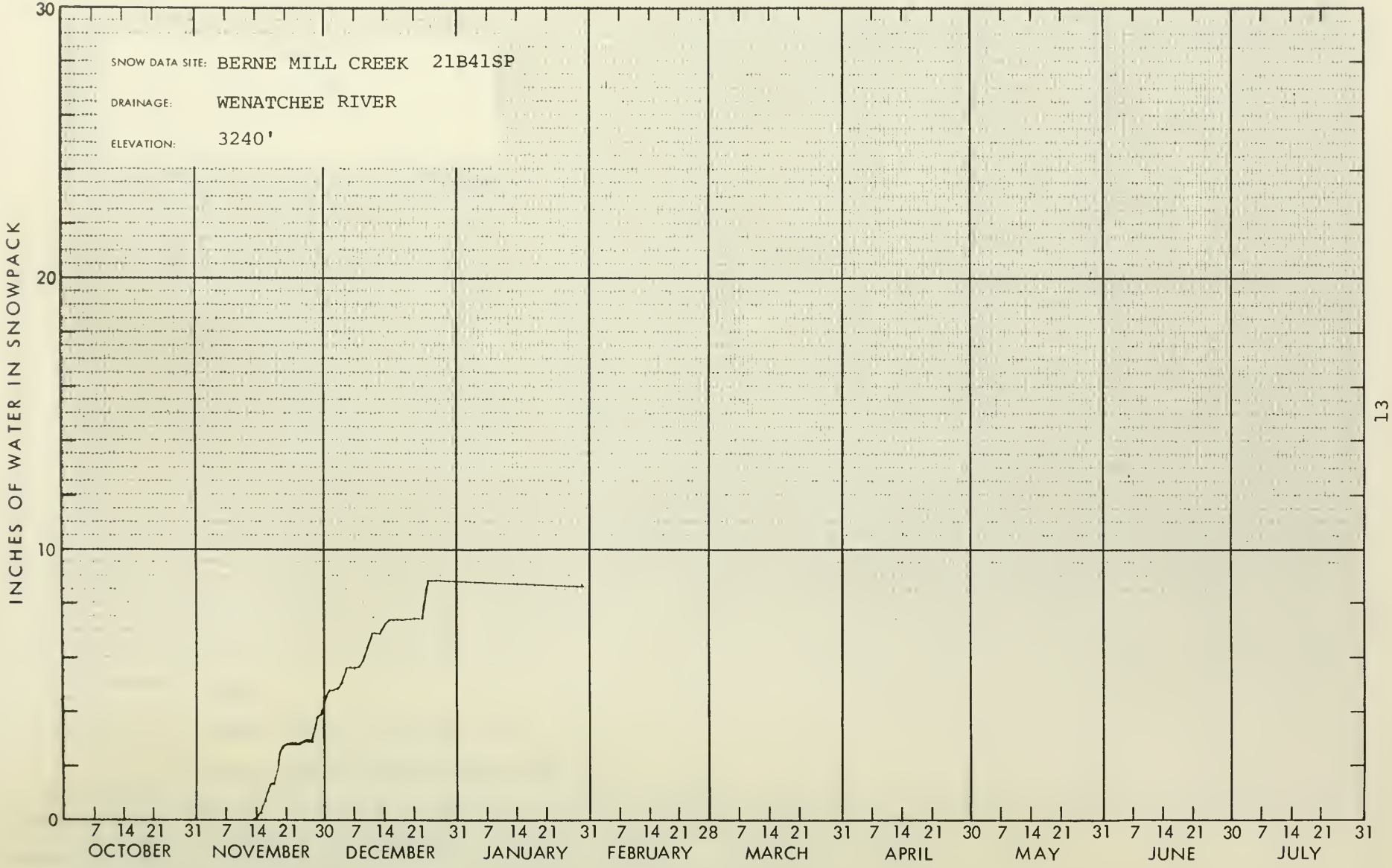
Preliminary Analysis by National Weather Service

WSFB-X138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DRAINAGE: WENATCHEE RIVER
ELEVATION: 3240'
INCHES OF WATER IN SNOWPACK
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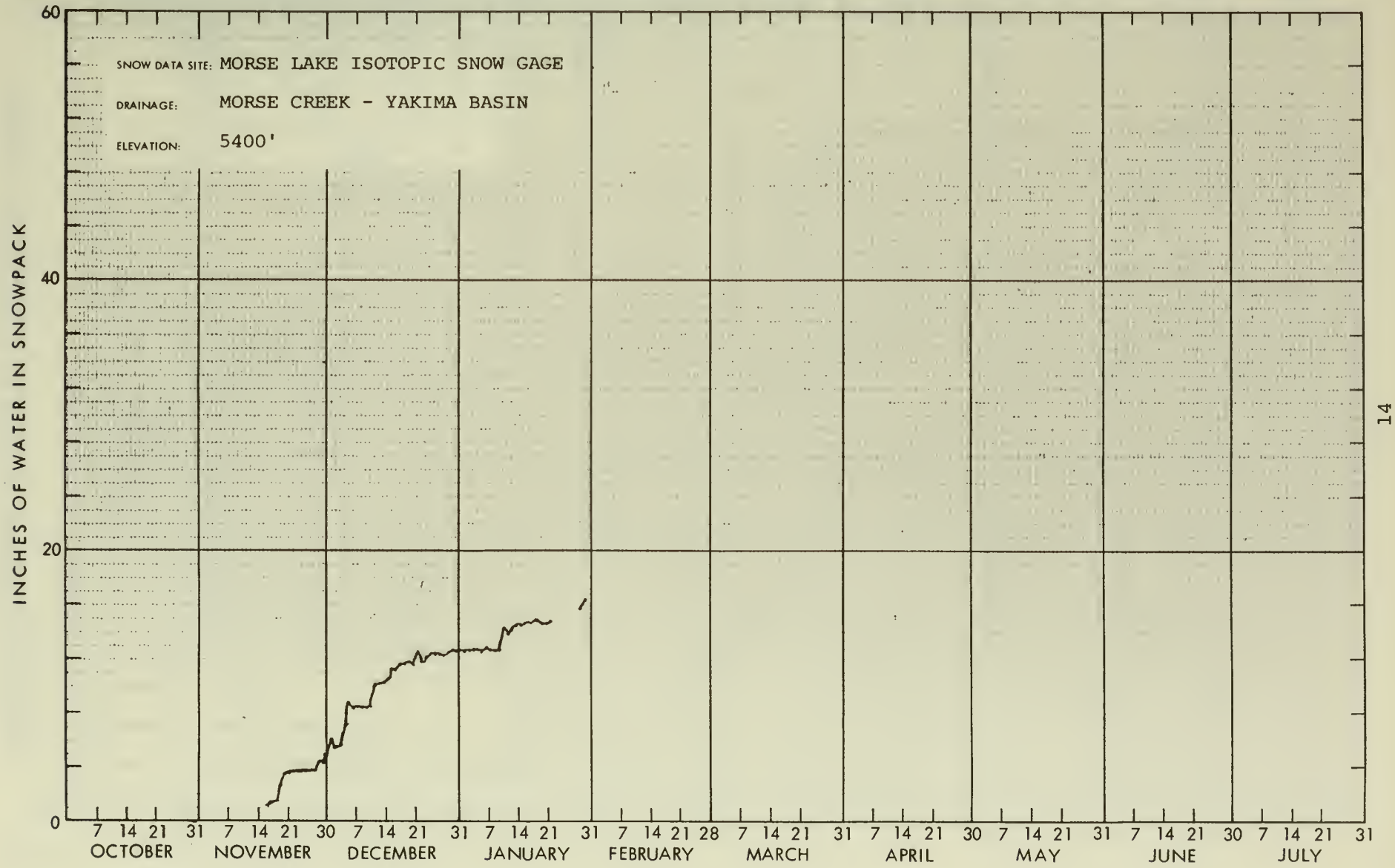
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

13

WSFB-X13C



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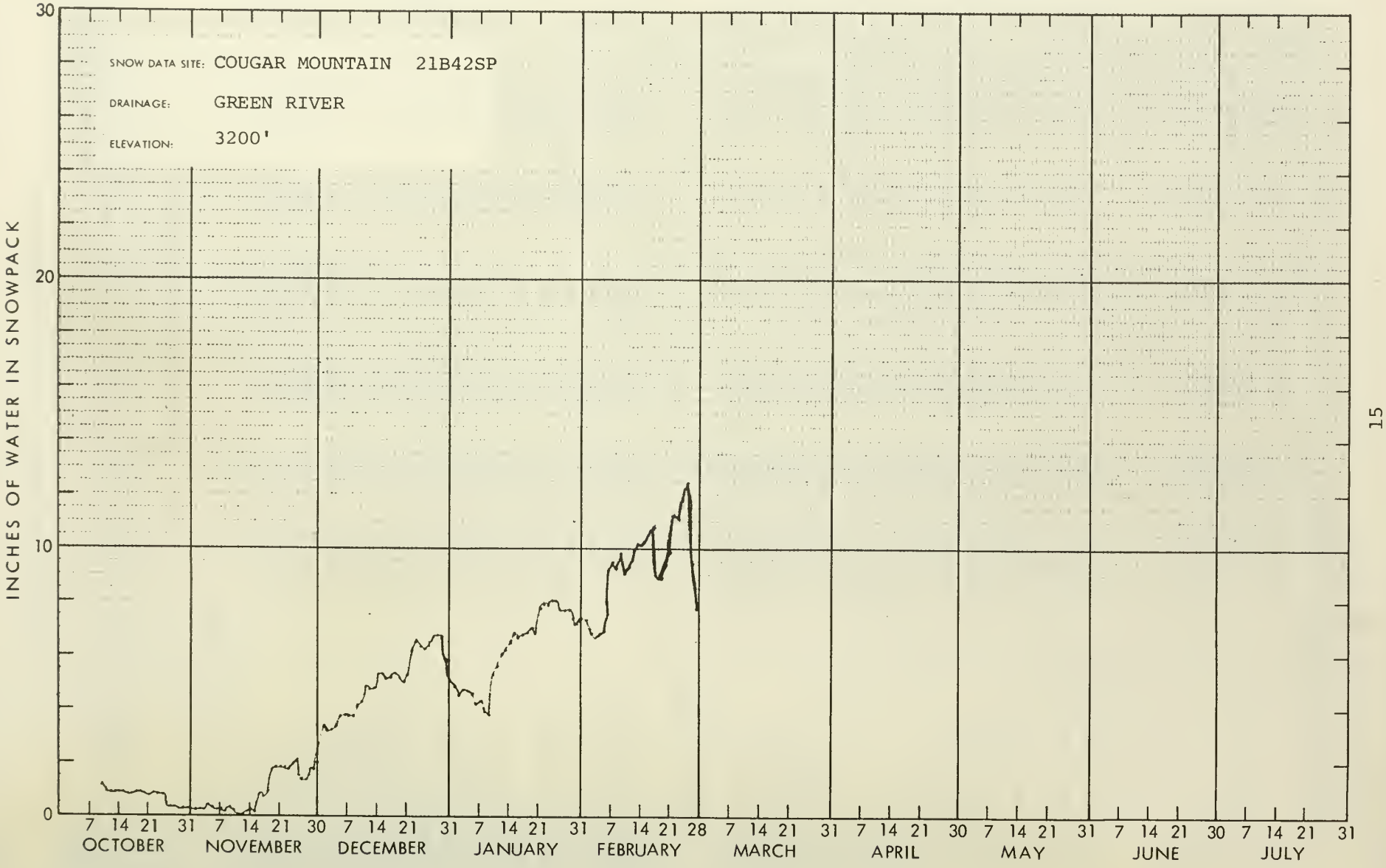
WSFB-X138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DRAINAGE: GREEN RIVER
ELEVATION: 3200'
INCHES OF WATER IN SNOWPACK
30
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

15

SNOW DATA TO MARCH 1, 1979 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Water Content (inches) Average #
U P P E R C O L U M B I A D R A I N A G E							
PEND OREILLE RIVER							
Baree Creek	15B11	5500	2/23	113	36.7	39.0	43.8
Baree Midway	15B16	4600	2/22	101	32.7	31.9	34.0
Baree Trail	15B15	3800	2/22	35	9.7	11.0	10.0
Benton Meadow	16A02	2344	2/26	26	7.0	6.8	6.4
Benton Spring	16A03	4900	2/26	62	17.5	18.0	17.7
Boyer Mountain	17A02	5250	2/27	76	19.8	24.4	23.1
Brush Creek Timber	14A13	5000	2/28	40	11.0	11.0	9.5
Chewelah	17A04	4923	2/25	45	12.0	15.0	14.3
Heart Lake Trail	14C10	4800	2/27	63	23.1	19.8	21.1
Hoodoo Basin	15C10	6000	2/27	123	42.3	46.7	45.4
Hoodoo Creek	15C01	5900	2/27	120	40.2	43.4	42.0
Lookout	15B02	5250	2/28	94	27.8	33.0	31.0
Mosquito Ridge	16A04A	5100	3/2	106	31.4	38.9	34.6
Nelson	19-Can	3050	2/28	53	13.7	15.0	14.5*
Schweitzer Bowl	16A06	4500	3/1	84	24.3	27.1	28.1
Schweitzer Ridge	16A05	6100	3/1	103	30.8	42.2	40.3
Winchester Creek	17A03	2970	2/27	41	9.0	10.0	10.6
KETTLE RIVER							
Barnes Creek	90-Can	5300	2/28	57	16.9	16.9	18.0*
Big White Mtn.	154-Can	5500	3/1	51	13.8	17.8	17.4*
Boulder Road	18A02	1450	2/26	17	4.2	5.2	4.5
Butte Creek	18A03	4070	2/26	28	5.8	10.0	8.5
Cabin Creek	18A08	3170	2/26	25	5.9	8.7	7.2
Carmi	126-Can	4100	3/1	22	4.8	7.8	6.4*
Farron # 1	17-Can	4000	2/27	37	8.0	15.0	12.4*
Farron # 2	243-Can	4000	2/27	41	9.6	15.2	12.0*
Goat Creek	18A04	3595	2/26	24	5.4	8.2	6.5
Graystoke Lake	5-Can	5950	2/27	46	12.4	14.2	16.6*
Monashee Pass	48A-Can	4500	2/28	44	11.9	14.3	12.8*
Snow Caps Creek	18A05	2150	2/26	16	4.1	6.0	4.8
Snow Caps Trail	18A06	2720	2/26	21	5.0	7.2	5.8
Summit G.S.	18A07	4600	2/26	21	4.8	8.3	7.3
Trapping Creek Lower	166-Can	3050	3/1	21	4.3	6.5	5.4*
Trapping Creek Upper	165-Can	4450	3/1	37	9.6	10.2	9.4*
COLVILLE RIVER							
Baird	17A06	3215	2/25	34	9.5	9.5	6.7
Carlson	18A09	2885	2/25	19	5.3	5.0	4.2
Chewelah	17A04	4925	2/25	45	12.0	15.0	14.3
Stranger Mountain	17A05	4990	2/25	44	11.8	12.6	12.5
Togo	18A10	3370	2/25	40	9.8	10.1	10.8

\# Average based on 1963-77 average
* Average for years of record

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO MARCH 1, 1979 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
SPOKANE RIVER							
Above Burke	15B08	6100	2/28	67	23.6	19.1	22.9
Copper Ridge	16B02	4800	2/28	85	27.7	20.3	25.1
Forty-nine Meadows	15B03	5000	3/1	86	23.4	21.6	27.2
Fourth of July Summit	16B03	3100	3/1	43	12.4	8.0	8.8
Kellogg Peak	16B05A	5560	3/2	86	21.0	32.3	28.2
Lookout	15B02	5250	2/28	94	27.8	33.0	31.0
Lost Lake	15B14A	6000	3/1	130	36.7	42.2	50.0
Lower Sands Creek	16B01	3400	2/27	56	18.5	14.6	17.5
Mosquito Ridge	16A04A	5110	3/2	106	31.4	38.9	34.6
Roland Summit	15B05A	5200	3/2	98	29.0	29.6	31.3
Sherwin	16C01	3200	2/28	49	15.7	8.8	13.3
Sunset	15B09A	5600	3/2	114	32.3	41.6	32.6
OKANOGAN RIVER							
Aberdeen Lake	6A-Can	4300	3/1	25	5.1	8.4	6.1*
Blackwall Mountain	100-Can	6250	2/28	74	21.7	26.4	31.2*
Bouleau Lake	234-Can	4580	2/24	41	9.7	13.7	11.7*
Brenda Mine	193-Can	4800	2/27	40	10.5	13.9	13.0*
Brookmere	27-Can	3200	2/26	26	6.5	10.5	9.0*
Carrs Landing Upper	168-Can	3200	2/27	18	4.1	7.0	4.7*
Enderby	130-Can	6250	2/26	72	22.1	35.3	33.0*
Esperon Creek Lower	164-Can	4400	2/25	35	7.9	12.1	11.2*
Esperon Creek Middle	163-Can	4700	2/25	43	10.6	13.2	13.8*
Esperon Creek Upper	162-Can	5400	2/25	46	12.3	16.2	16.9*
Graystoke Lake	5-Can	5950	2/27	46	12.4	14.2	16.6*
Hamilton Hill	107-Can	4900	2/23	43	11.8	17.3	14.3*
Harts Pass	20A05A	6500	2/27	105	29.3	41.8	41.1
Horseshoe Basin +	19A05a	7000	2/28	48	12.0	-	16.3
Isintok Lake	152-Can	5510	2/25	27	6.3	9.7	7.9*
Loup Loup	19A07	4650	2/26	19	4.1	10.9	8.8
McCulloch	4-Can	4200	2/25	30	6.3	7.5	6.4*
Missezula Mountain	106-Can	5100	2/24	30	7.5	11.8	9.2*
Mission Creek	5A-Can	6000	2/27	53	14.6	18.1	17.7*
Monashee Pass	48A-Can	4500	2/28	44	11.9	14.3	12.8*
Mount Kobau	156-Can	5950	2/27	20	3.7	11.1	11.5*
Muckamuck +	19A09a	6390	2/28	38	7.6	16.5	14.7
Mutton Creek No. 1	19A01	5700	2/26	24	4.7	14.7	12.7
Mutton Creek No. 2 SP	19A11	6000	2/26	-	3.6	15.0	10.0
New Copper Mountain	46A-Can	4300	2/27	25	4.7	5.5	5.7*
New Penticton Res. #2	183-Can	5225	2/28	31	6.3	9.1	8.2*
Nickel Plate Mtn.	47-Can	6200	2/27	28	6.7	8.3	7.2*

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS-PORTLAND OREGON 1973

SNOW DATA TO MARCH 1, 1979 - APPENDIX 3

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
OKANOGAN RIVER (Cont.)							
Oyama Lake	203-Can	4400	2/26	26	6.1	8.3	6.9*
Paysayten +	20A28a	4300	2/28	51	12.8	16.2	16.9
Postill Lake	55-Can	4500	2/28	31	7.3	8.5	7.6*
Quartette Lake	34-Can	4000	2/26	41	9.8	9.8	8.9*
Rusty Creek	19A03	4000	2/27	17	3.7	9.7	6.6
Salmon Meadows	19A02	4500	2/26	22	4.4	11.2	9.1
Silver Star Mountain	99-Can	6050	2/25	55	15.4	28.9	24.6*
Starvation Mtn. +	19A10a	6750	2/28	42	8.4	20.1	17.5
Summerland Reservoir	3A-Can	4200	2/24	34	8.3	10.2	9.1*
Touts Coulee	19A06	2845	2/27	7	1.3	4.5	3.5
Trout Creek	3-Can	4700	2/27	30	6.4	8.1	6.6*
Vaseux Creek	233-Can	4600	2/24	21	3.6	5.3	6.8*
White Rocks Mountain	70-Can	6000	2/26	54	16.6	26.9	19.8*
METHOW RIVER							
Billy Goat Pass +	20A10a	6409	Not Measured			-	31.3
Dollar Watch +	20A29a	7000	Not Measured			-	27.0
Harts Pass	20A05A	6500	2/27	105	29.3	41.8	41.1
Horseshoe Basin +	19A05a	7000	2/28	48	12.0	-	16.3
Loup Loup	19A07	4650	2/26	19	4.1	10.9	8.8
Mutton Creek No. 1	19A01	5700	2/26	24	4.7	14.7	12.7
Mutton Creek No. 2 SP	19A11	6000	2/26	-	3.6	15.0	10.0
Rusty Creek	19A03	4000	2/27	17	3.7	9.7	6.6
Salmon Meadows	19A02	4500	2/26	22	4.4	11.2	9.1
War Creek Pass +	20A31a	6500	Not Measured			-	42.9
CHELAN LAKE BASIN							
Cloudy Pass +	20A22a	6500	2/28	103	31.1	56.6	35.0
Little Meadows +	20A24a	5275	2/28	118	35.6	51.2	37.6
Lyman Lake	20A23A	5900	2/28	126	38.2	-	49.8
Park Creek Ridge	20A12A	4600	2/28	104	31.3	50.8	44.2
Rainy Pass	20A09	4780	2/27	98	26.0	41.1	37.0
ENTIAT RIVER							
Blue Creek G.S.	20B28a	5425	2/27	104	28.1	49.2	33.8
Brief	20B19	1600	2/25	35	9.4	9.9	7.5
Entiat Meadows +	20A33a	4540	2/27	102	27.5	51.7	57.7
Entiat River Trail +	20A34a	3325	2/27	70	18.9	29.5	25.6
Four Mile Ridge +	20B27a	6800	2/27	60	16.2	40.2	28.4
Fox Camp +	20A36a	6510	2/27	122	32.9	69.7	52.9
Pope Ridge	20B20	3540	2/27	56	14.9	24.8	18.2

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation

USDA-SCS-PORTLAND OREGON 1973

SNOW DATA TO MARCH 1, 1979 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Water Content (inches) Average #
ENTIAT RIVER (Cont.)							
Pugh Ridge +	20A32a	6725	2/27	81	21.9	40.6	40.8
Shady Pass	20A37	6200	2/28	69	18.4	34.4	23.7
Snow Brushy +	20A35a	3910	2/27	93	25.1	46.4	35.8
Tommy Creek +	20B21a	4900	2/27	68	18.4	32.8	26.5
WENATCHEE RIVER							
Berne-Mill Creek	21B23	2925	2/13	69	20.2	28.0	24.5
			2/28	85	27.8	27.7	26.0
Berne-Mill Creek New SP	21B41	3240	2/28	79	26.6	23.2	24.0
Blewett Pass No. 2	20B02	4270	2/23	54	15.0	16.8	15.0
Chiwaukum G.S.	20B16	1810	2/13	37	8.8	12.4	11.0
			2/27	44	11.4	11.6	11.6
Fish Lake	21B04	3371	2/28	92	19.8	28.5	31.1
Lake Wenatchee	20B05	1970	2/13	46	13.6	16.9	13.5
			2/27	53	16.0	17.0	14.4
Leavenworth R.S.	20B17	1127	2/13	24	6.8	6.4	5.5
			2/27	26	8.1	3.3	4.4
Lyman Lake	20A23A	5900	2/28	126	38.2	-	49.8
Merritt	20B18	2140	2/13	51	15.8	19.6	15.5
			2/27	62	17.0	19.1	15.8
Stevens Pass	21B01	4070	2/13	108	32.3	45.2	43.5
			2/27	130	46.0	45.7	48.0
Stevens Pass Sand Shed	21B45	3700	2/13	85	25.5	33.6	32.1
			2/27	104	35.0	33.5	34.9
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	2/27	30	8.0	11.8	8.1
Scout-A-Vista	20B04	3400	2/27	30	7.7	12.7	8.2
STEMILT CREEK							
Jump-Off	20B08	4450	2/26	38	11.0	14.0	8.4
Stemilt Slide	20B06	5000	2/26	52	13.4	17.4	13.1
Upper Wheeler	20B07	4400	2/26	37	10.9	12.3	9.7
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300	2/26	36	10.4	16.0	13.3
Colockum Creek Lower	20B23	4300	2/26	36	10.3	13.3	10.1
Trough # 2 SP	20B25	5310	2/26	43	12.0	19.0	New

\# Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadia observation .

USDA SCS-PORTLAND OREGON 1973

SNOW DATA TO MARCH 1, 1979 - APPENDIX 5

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
YAKIMA RIVER							
Ahtanum R.S.	21C11	3100	2/26	21	5.4	9.0	6.7
Big Boulder Creek	21B09	3200	2/27	64	19.4	15.3	19.3
Blewett Pass No. 2	20B02	4270	2/23	54	15.0	16.8	15.0
Bumping Lake	21C08	3450	2/14	29	7.5	12.8	14.8
			3/1	42	11.0	14.1	20.4
Bumping Lake New	21C36	3400	2/14	36	11.5	15.6	18.5
			3/1	54	14.8	16.8	20.2
Cayuse Pass	21C06	5300	2/28	169	55.7	-	71.0
Colockum Pass	20B09	5370	2/22	42	11.6	22.0	14.2
Cooke Creek	20B10	4123	2/22	23	5.4	6.4	5.7
Corral Pass	21B13	6000	2/28	93	29.7	30.0	35.1
Fish Lake	21B04	3371	2/28	92	19.8	28.5	31.1
Green Lake	21C10	6000	2/26	77	24.2	32.2	29.6
Grouse Camp	20B11	5385	2/23	49	14.2	19.5	15.5
High Creek	20B12	2930	2/23	26	6.8	6.9	6.1
Joe Lake +	21B46a	4624	2/19	156	53.0	-	53.5
Lake Cle Elum	21B14M	2200	2/13	32	9.6	7.2	9.2
			3/1	32	10.5	7.0	9.2
Lemah Creek +	21B47a	3327	2/19	99	33.7	37.6	41.9
Manashtash	20C01	3935	2/26	21	5.3	8.5	4.3
Morse Lake	21C17	5400	2/28	123	35.4	50.8	47.2
Nanum	20B13	2340	2/23	35	8.5	8.3	9.8
Olallie Meadows	21B02	3625	2/28	109	39.2	23.3	44.8
Satus Pass	20D01	4030	2/28	26	8.8	8.5	9.1
Stampede Pass SP	21B10	3860	2/15	96	32.8	41.6	36.2
			3/1	113	40.7	40.3	35.7
Trail Creek	20B14	3360	2/22	20	5.0	0.0	2.6
Tunnel Avenue	21B08	2450	2/15	47	14.6	13.6	19.9
			3/1	62	19.3	14.1	21.6
Van Epps Pass +	20B26a	5925	2/19	104	35.4	38.8	43.0
Walters Flat	20B15	3360	2/23	30	7.4	7.9	7.1
Waptus Lake +	21B49a	3024	2/19	93	42.8	30.8	41.4
White Pass (E. Side)	21C28	4500	2/14	58	16.2	17.0	21.0
			3/1	70	22.6	18.4	23.1
AHTANUM CREEK							
Ahtanum R.S.	21C11	3100	2/26	21	5.4	9.0	6.7
Green Lake	21C10	6000	2/26	77	24.2	32.2	29.6

\# Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS-PORTLAND OREGON 1973

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SNOW DATA TO MARCH 1, 1979 - APPENDIX 6

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
UPPER COLUMBIA DRAINAGE							
ASOTIN CREEK							
Spruce Springs	17C04	5700	2/26	77	22.7	16.8	22.6
MILL CREEK							
Homestead	17C01	4030	2/21	41	10.8	5.9	8.2
Martin Springs	17C02	4400	2/21	52	14.8	8.7	12.1
Tollgate	18D3M	5070	2/28	85	27.7	10.2	22.1
KLICKITAT RIVER							
Satus Pass	20D01	4030	2/28	26	8.8	8.5	9.1
COWLITZ RIVER							
Cayuse Pass	21C06	5300	2/28	169	55.7	-	71.0
White Pass (E. Side)	21C28	4500	2/14	58	16.2	17.0	21.0
			3/1	70	22.6	18.4	23.1
PUGET SOUND DRAINAGE							
WHITE RIVER							
Cayuse Pass	21C06	5300	2/28	169	55.7	-	71.0
Corral Pass	21B13	6000	2/28	93	29.7	30.0	35.1
Morse Lake	21C17	5400	2/28	123	35.4	50.8	47.2
GREEN RIVER							
Airstrip	21B24	1800	2/28	14	5.0	0.3	5.1
Cougar Mountain SP	21B42	3200	2/28	60	21.9	-	20.9
Lester Creek	21B29	3100	2/28	72	21.8	9.9	21.7
Sawmill Ridge	21B31	4700	2/28	97	29.3	23.0	33.7
Snowshoe Butte SP	21B43	5000	2/28	134	46.0	38.0	52.7
Stampede Pass SP	21B10	3860	2/15	96	32.8	41.6	36.2
			3/1	113	40.7	40.3	35.7
Twin Camp	21B30	4100	2/28	78	24.4	-	22.3
CEDAR RIVER							
City Cabin	21B03	2390	3/1	43	14.0	0.9	17.2
Mt. Gardner	21B21	3300	2/28	56	18.2	0.0	18.7
Mt. Lindsay	21B16	2500	2/28	49	15.0	0.0	15.1
Mt. Washington New	21B15	3000	2/28	28	10.1	0.0	8.8
Rex River	21B17	2400	2/28	57	17.5	0.0	12.7
S. F. Cedar	21B06	3000	3/1	46	14.3	3.6	19.7
Tinkham Creek	21B20	3400	3/1	59	18.9	7.7	22.9

Average based on 1963-77 average

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO MARCH 1, 1979 - APPENDIX 7

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Water Content (inches) Average #
SNOQUALMIE RIVER							
Alpine Meadow	21B48	3500	2/27	113	40.1	20.0	41.2
Lake Elizabeth	21B19	2900	3/1	114	40.1	21.0	37.7
Olallie Meadows	21B02	3625	2/28	109	39.2	23.3	44.8
S. F. Tolt	21B18	1900	2/27	24	8.6	0.0	3.2
SKYKOMISH RIVER							
Lake Elizabeth	21B19	2900	3/1	114	40.1	21.0	37.7
Stevens Pass	21B01	4070	2/13	108	32.3	45.2	43.5
			2/27	130	46.0	45.7	48.0
Stevens Pass Sand Shed	21B45	3700	2/13	85	25.2	33.6	32.1
			2/27	104	35.0	33.5	34.9
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	2/26	47	13.0	12.4	14.9
Beaver Pass	21A01	3680	2/26	69	19.1	23.6	28.7
Brown Top Ridge +	21A28a	6000	2/27	122	34.4	50.0	61.2
Cloudy Pass +	20A22a	6500	2/28	103	31.1	46.7	35.0
Devils Park	20A04	5900	2/27	106	29.0	39.2	41.3
Freezeout Creek Trail	20A01	3500	2/26	46	11.3	10.0	12.7
Freezeout Meadows New	20A38	5000	2/26	100	29.0	22.4	42.5
Granite Creek	21A29A	3500	2/27	60	15.2	14.9	19.2
Harts Pass	20A05A	6500	2/27	105	29.3	41.8	41.1
Klesilkwa	35B-Can	3700	2/28	45	13.1	9.1	12.7*
Lyman Lake	20A23A	5900	2/28	126	38.2	-	49.8
Meadow Cabins	20A08	1900	2/28	32	10.6	6.2	7.4
New Hozomeen Lake	21A30	2800	2/26	40	10.6	8.8	14.2
New Tashme	26A-Can	2500	2/27	37	11.7	9.5	11.2*
Quartette Lake	34-Can	4000	2/26	41	9.8	9.8	8.9*
Rainy Pass	20A09	4780	2/27	98	26.0	41.1	37.0
Thunder Basin	20A07	4200	2/28	68	19.1	17.2	20.9

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO MARCH 1, 1979 - APPENDIX 8

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
BAKER RIVER							
Dock Butte +	21A11A	3800	Not Measured			48.0	47.4
			2/28	144	58.0	38.0	64.2
Easy Pass +	21A07A	5200	2/14	96	38.0	62.0	51.7
			2/28	130	52.0	57.0	71.3
Jasper Pass +	21A06A	5400	2/14	148	59.0	68.0	66.5
			2/28	178	71.0	64.0	82.5
Marten Lake +	21A09A	3600	Not Measured			48.0	55.4
			Not Measured			45.0	71.8
Mount Blum +	21A18a	5800	Not Measured			50.0	48.4
			2/28	115	46.0	48.0	62.1
Panorama New	21A26	4300	2/11	83	27.2	48.4	56.8
			2/23	113	40.3	49.1	66.0
Rocky Creek +	21A12A	2100	2/14	40	29.0	12.0	24.7
			2/28	90	36.0	7.0	30.4
Schreibers Meadow +	21A10A	3400	2/14	118	47.0	36.0	41.0
			2/28	172	69.0	28.0	54.5
S. F. Thunder Creek +	21A14A	2200	Not Measured			0.0	10.0
			2/28	30	12.0	0.0	11.7
Watson Lakes +	21A08A	4500	Not Measured			40.0	44.4
			2/28	132	53.0	28.0	60.9
NOOKSACK RIVER							
Bald Mountain +	21A19a	4400	3/2	120	43.2	27.7	46.2
Canyon +	21A20a	5100	3/2	116	41.8	49.6	58.1
Glacier Creek	21A23	3700	2/26	64	23.1	9.4	15.1
Panorama New	21A26	4300	2/11	83	27.2	48.4	56.8
			2/23	113	40.3	49.1	66.0
Twin Lakes +	21A21a	5200	3/2	164	59.0	47.2	70.4
O L Y M P I C P E N I N S U L A							
DUNGENESS RIVER							
Deer Park	23B04	5200	2/23	58	16.6	13.2	18.3
MORSE CREEK							
Cox Valley	23B14	4500	2/24	97	27.1	27.4	36.5
ELWHA RIVER							
Hurricane	23B03	4500	2/26	75	18.5	11.2	20.3

\# Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS-PORTLAND OREGON 1973

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
  Corps of Engineers
U. S. Department of Agriculture
  Forest Service
U. S. Department of Commerce
  NOAA, National Weather Service
U. S. Department of the Interior
  Bonneville Power Administration
  Bureau of Reclamation
  Geological Survey
  National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Room 360, U.S. Court House
Spokane, Washington 99201

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COOPERATIVE SNOW SURVEYS

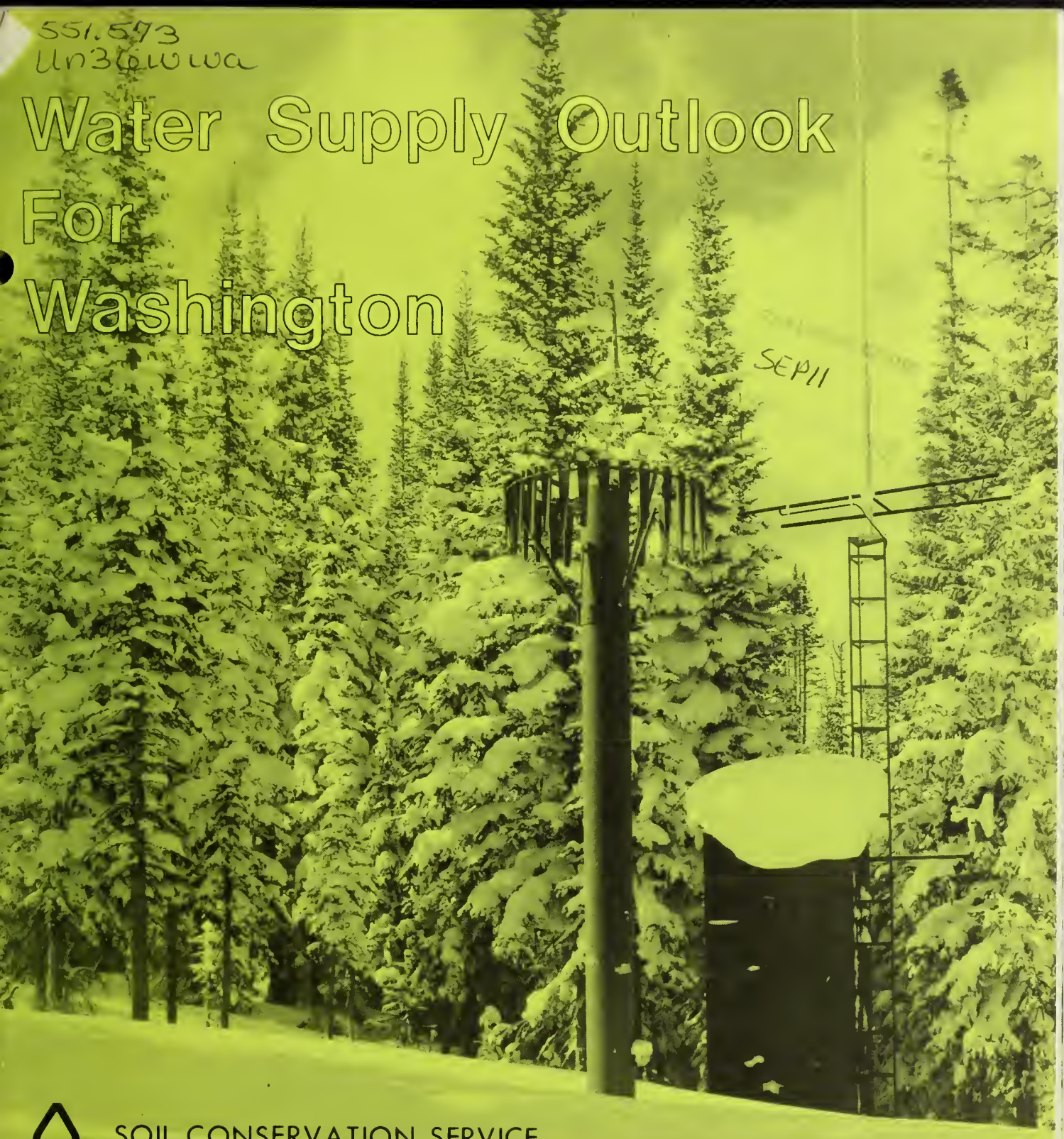
Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"

551.573
Un3Wawa

Water Supply Outlook For Washington

SEP11



SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
APR. 1, 1979

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snawfall accumulates during the winter and spring, several manths before the snow melts ond appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtoined by sampling snow depth and water equivalent ot surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth ond water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow caurses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radia telemetry are expanding and will pravide a cantinuaus record of snow water and other parameters at key locations.

Detoiled data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in o West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: VIEW OF A SNOTEL DATA SITE IN THE SNOWY RANGE IN WYOMING. TALL CYLINDRICAL DEVICE IS A PRECIPITATION GAGE. SNOW PILLOWS ON THE GROUND NOT VISIBLE DUE TO SNOW COVER. SHELTER HOUSE, ANTENNA TOWER, ANTENNA, AND TEMPERATURE UNIT ARE VISIBLE BEHIND THE PRECIPITATION GAGE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Braadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizono	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozemon, Montano 59715
Nevoda	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South Stote St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

USDA-SCS-PORTLAND OR. 1978

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

R.M. DAVIS

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON D C

Released by

GALEN S. BRIDGE

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

WILBUR G. HALLAUER

DIRECTOR
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

Report prepared by

ROBERT T. DAVIS, Snow Survey Supervisor
and
NORINE P. KENT, Statistical Assistant

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201

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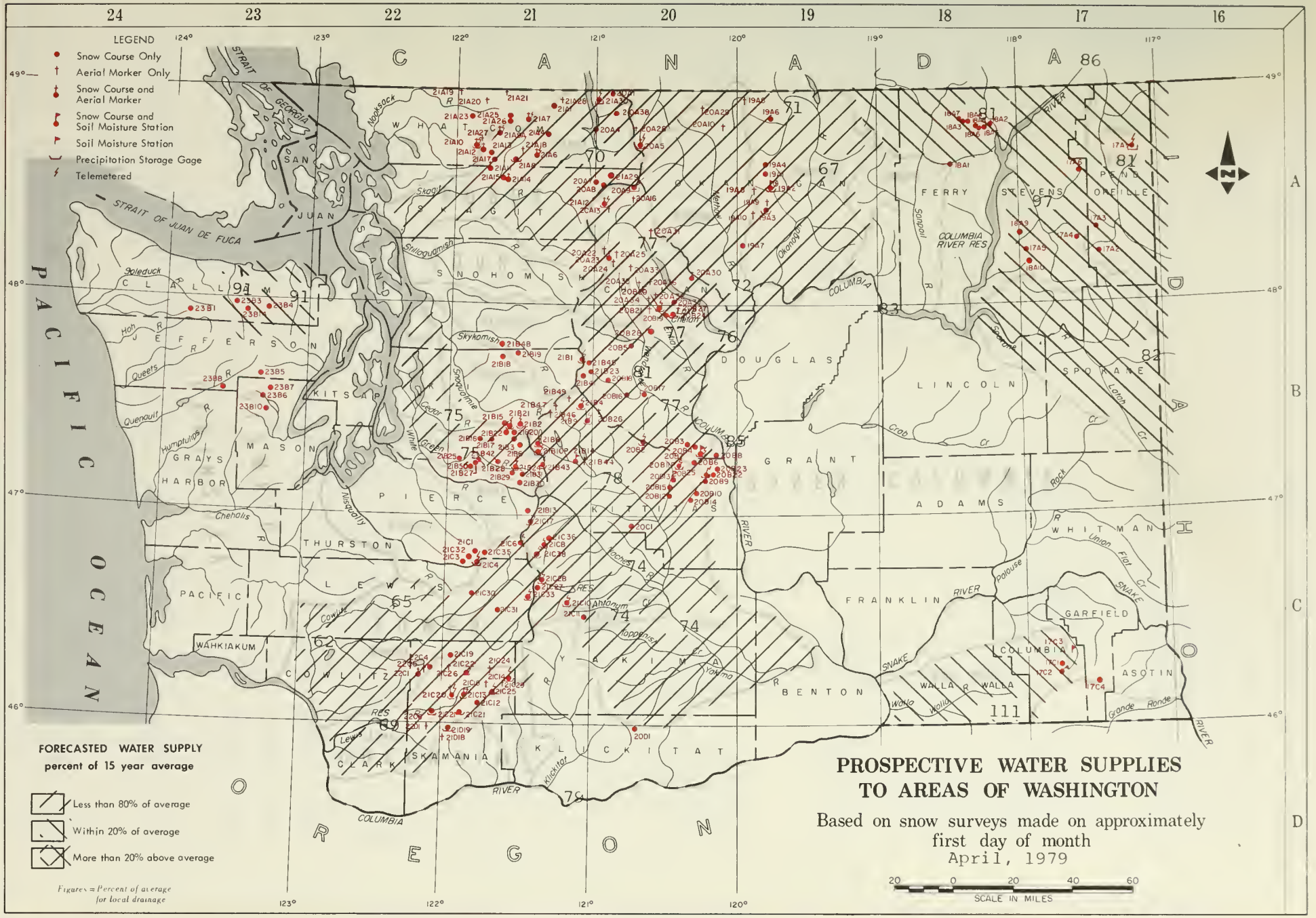
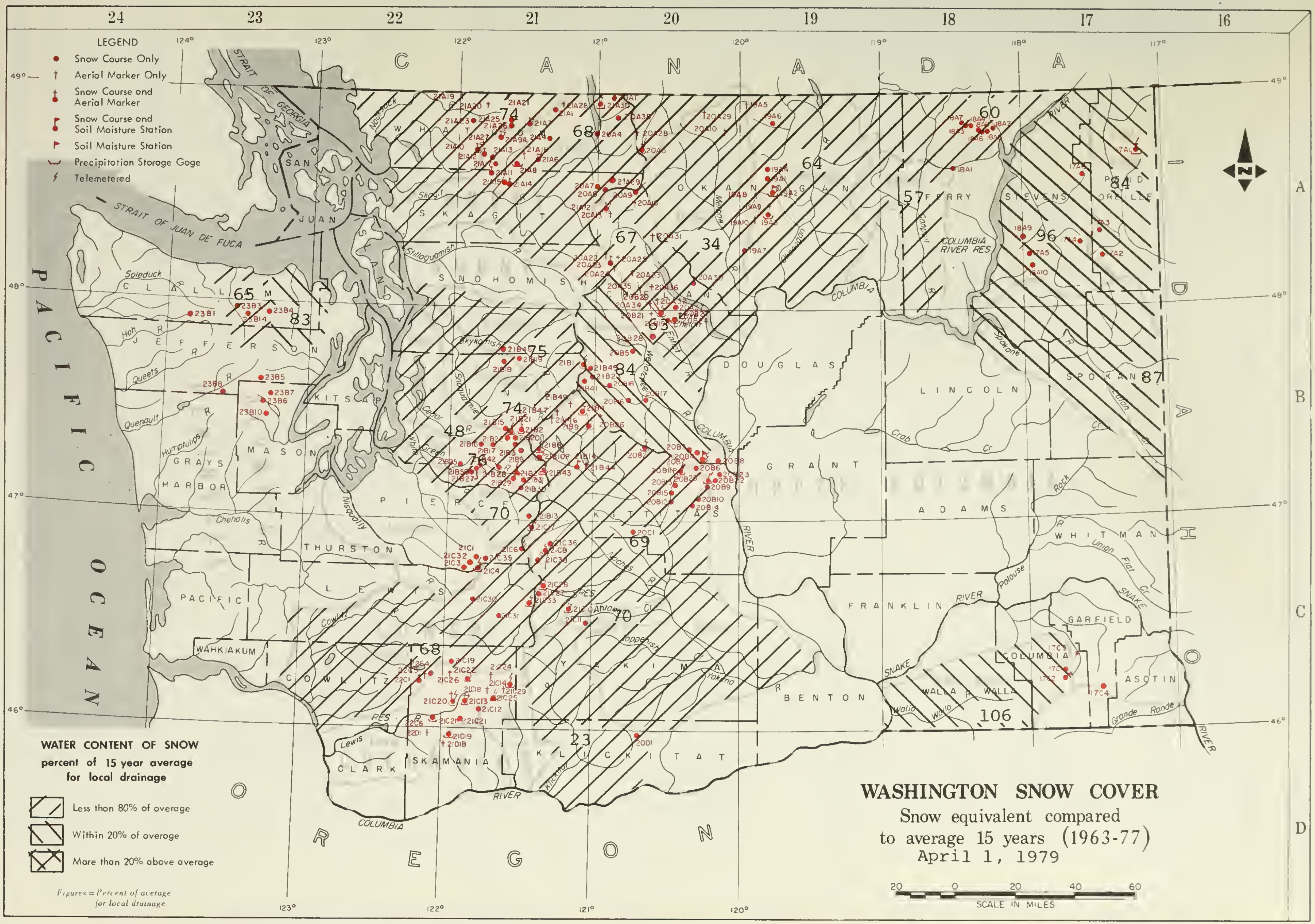

LEGEND
Snow Course Only
Aerial Marker Only
Snow Course and Aerial Marker
Snow Course and Soil Moisture Station
Soil Moisture Station
Precipitation Storage Gage
Telemetered
FORECASTED WATER SUPPLY
percent of 15 year average
Less than 80% of average
Within 20% of average
More than 20% above average
Figures = Percent of average for local drainage
PROSPECTIVE WATER SUPPLIES TO AREAS OF WASHINGTON
Based on snow surveys made on approximately first day of month
April, 1979
SCALE IN MILES
CANADA
PACIFIC OCEAN
OREGON
STRAIT OF GEORGIA
STRAIT OF JUAN DE FUCA
SAN JUAN ISLANDS
JEFFERSON
CLALLAM
KITSAP
MASON
GRAYS HARBOR
PIERCE
THURSTON
LEWIS
WAHKIAKUM
COWLITZ
CLARK
SKAMANIA
KLICKITAT
YAKIMA
BENTON
KITTITAS
SNOHOMIS
KING
DOUGLAS
GRANT
ADAMS
FRANKLIN
WHITMAN
LINCOLN
SPOKANE
FERRY
STEVENS
PEND OREILLE
COLUMBIA
GARFIELD
ASOTIN
WALLA WALLA
COLUMBIA RIVER RES
RIVER

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Bayer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18AB	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snaw Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	3BE	4990
Togo	18A10	6	29N	3BE	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	1BE	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methaw River					
Billy Goat Pass	20A10a	10	3BN	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5AP	7	37N	18E	6500
Harseshae Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Claudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	1B	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	1B	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9P	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20B28a	19	2BN	1BE	5425
Brief	20B19	34	2BN	19E	1600
Entiat Meadows	20A33a	2B	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6B00
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	1BE	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	2BN	1BE	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Poss No. 2	20B2P	35	22N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1B10
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B1B	4	26N	16E	2140
Stevens Pass	21B1P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	20N	20E	5310
Calackum Creek					
Calackum Creek Upper	20B22	11	20N	20E	5300
Calackum Creek Lower	20B23	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Scaut-A-Vista	20B4	1B	21N	20E	3400
Stemilt Creek					
Jump-Off	20BB	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9P	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Calockum Pass	20B9	25	20N	20E	5370
Cooke Creek	20B10	17	19N	20E	4123
Domery Flat	21B44m	15	20N	14E	2200
Fish Lake	21B4P	28	24N	14E	3371
Green Lake	21C10P	3	12N	13E	6000
Grouse Camp	20B11P	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21B47a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17P	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3B75
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21BBP	13	21N	11E	2450
Van Epps Pass	20B26a	16	23N	15E	5925
Walters Flat	20B15	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28P	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500
LOWER COLUMBIA DRAINAGE					
Asatin Creek					
Spruce Springs	17C4	9	BN	40E	5700
Mill Creek					
Cause	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
White Salmon River					
Cultus Creek	21C12	35	7N	8E	4000
Lewis River					
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21P	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25P	28	8N	9E	3500
Lewis River (cantinued)					
Lone Pine Shelter	21C26P	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldman Pass	21D19P	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Raad	22C4	29	9N	6E	2100
Spencer Meadaw	21C20aP	16	BN	7E	3400
Surprise Lakes	21C13AP	14	7N	BE	4250
Table Mauntain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cawlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Masquito Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	2B	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33P	11	13N	11E	5900
Patato Hill	21C14P	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250
PUGET SOUND DRAINAGE					
Nisqually River					
Ghast Farest	21C4P	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	8E	5500
Stem Glade	21C1	13	15N	8E	5050
White River					
Corral Pass	21B13	30	18N	11E	6000
Green River					
Airstrip	21B24P	1B	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21B10P	25	21N	11E	3860
Twin Camp	21B30	1B	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washingtan	21B15	B	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
Sauth Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400
Snaqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadaws	21B2P	19	22N	11E	3625
South Fork Tolt	21B18	26	26N	9E	1900
Skykamish River					
Lake Elizabeth	21B19	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brawn Tap	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeaut Meadows (New)	20A38	B	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadows Cabins	20AB	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30P	10	35N	14E	4200
Baker River					
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Koma Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	BE	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	BE	2100
Schreibers Meadow	21A10AP	18	37N	BE	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Noaksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	BE	5100
Glacier Creek	21A23	9-10	3BN	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panarama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Marse Creek					
Cax Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skokomish River					
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	2B	25N	5W	5200
Sundown Pass	23B8	25	24N	7W	3900
Soleduck River					
Deer Lake	23B1	14	28N	9W	3900

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow


WASHINGTON SNOW COVER
Snow equivalent compared
to average 15 years (1963-77)
April 1, 1979
LEGEND
Snow Course Only
Aerial Marker Only
Snow Course and Aerial Marker
Snow Course and Soil Moisture Station
Soil Moisture Station
Precipitation Storage Gage
Telemetered
WATER CONTENT OF SNOW
percent of 15 year average
for local drainage
Less than 80% of average
Within 20% of average
More than 20% above average
Figures = Percent of average for local drainage
SCALE IN MILES
20 0 20 40 60
CANADA
IDAHO
OREGON
PACIFIC OCEAN
STRAIT OF GEORGIA
STRAIT OF JUAN DE FUCA
SAN JUAN
WHATCOM
SKAGIT
OKANOGAN
FERRY
STEVENS
PEND OREILLE
SPOKANE
LINCOLN
DOUGLAS
CHELAN
SNOHOMISH
KING
KITSAP
CLALLAM
JEFFERSON
MASON
GRAYS HARBOR
PIERCE
THURSTON
KITTITAS
GRANT
ADAMS
WHITMAN
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GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
BENTON
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KLICKITAT
SKAMANIA
CLARK
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SCS-PORTLAND, OR. 1978 M7-OL-22028C

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE

Pend Oreille River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Boyer Mauntain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970

Kettle River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Baulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snaw Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600

Colville River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mauntain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370

Sanpoil River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Sherman Creek Pass	18A1	19	36N	35E	5350

Okanogan River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Muttan Creek Na. 1	19A1	30	37N	24E	5700
Muttan Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadaws	19A2PM	33	37N	24E	4500
Starvatian Mtn.	19A10a	15	35N	23E	6750
Touts Caulee	19A6	30	39N	25E	2845

Methaw River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Billy Goat Pass	20A10a	10	38N	20E	6400
Dallar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5AP	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650

Chelan Lake Basin

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Claudy Pass	20A22a	12	31N	15E	6500
Greenwaod Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	18	34N	16E	4600
Petersans	20A16a	3	34N	17E	3730
Rainy Pass	20A9P	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500

Entiat River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Blue Creek G.S.	20828a	19	28N	18E	5425
Brief	20819	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20827a	15	28N	19E	6800
Fax Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	18E	3540
Pope Ridge Snow Pillow	20824SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900

Wenatchee River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21841SP	13	26N	14E	3240
Blewett Pass No. 2	20B2P	35	22N	17E	4270
Chiwaukum G. S.	20816	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenwarth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	2181P	14	26N	13E	4070
Stevens Pass Sond Shed	21B45	12	26N	19E	3700
Traugh #2	20B25SP	10	20N	20E	5310

Colockum Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20823	1	20N	20E	4300

Squilchuck Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Beehive Springs	20B3	12	21N	19E	4400
Scaut-A-Vista	2084	18	21N	20E	3400

Stemilt Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Jump-Off	2088	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400

Yakima River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Baulder Creek	21B9P	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Colockum Pass	2089	25	20N	20E	5370
Caake Creek	20810	17	19N	20E	4123
Domery Flat	21B44m	15	20N	14E	2200
Fish Lake	21B4P	28	24N	14E	3371
Green Lake	21C10P	3	12N	13E	6000
Grause Camp	20811P	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21814M	15	20N	14E	2200
Lemah Creek	21847a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17P	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	2188P	13	21N	11E	2450
Van Epps Pass	20B26a	16	23N	15E	5925
Walters Flat	20B15	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28P	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500

LOWER COLUMBIA DRAINAGE

Asotin Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Spruce Springs	17C4	9	8N	40E	5700

Mill Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cause	17C3m	2	9N	40E	3370
Hamestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400

Klickitat River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Satus Pass	20D1	21	6N	17E	4030

White Salmon River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cultus Creek	21C12	35	7N	8E	4000

Lewis River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21P	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200
Divide Meadaw	21C29a	21	9N	10E	5600
Grand Meadow	21C25P	28	8N	9E	3500

Lewis River (cantinued)

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Lone Pine Shelter	21C26P	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldman Pass	21D19P	22	6N	7E	3100
Ploins of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20aP	16	8N	7E	3400
Surprise Lakes	21C13AP	14	7N	8E	4250
Table Mauntain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000

Cowlitz River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cayuse Pass	21C6	15	16N	10E	5300
Mosquita Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33P	11	13N	11E	5900
Potato Hill	21C14P	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

Nisqually River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Ghost Forest	21C4P	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Poradise Park (New)	21C35	13	15N	8E	5500
Stem Glade	21C1	13	15N	8E	5050

White River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Carral Poss	21B13	30	18N	11E	6000

Green River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Airstrip	21824P	18	20N	11E	1800
Charley Creek	21825	27	21N	8E	1200
Cougar Mountain	21842SP	21	21N	9E	3200
Grass Mountain No. 2	21827	14	20N	8E	2900
Grass Mountain No. 3	21828	12	20N	8E	2100
Lester Creek	21829	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21831	5	19N	11E	4700
Snowshoe Butte	21B43SPp	14	20N	11E	5000
Stampede Pass	21810P	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100

Cedar River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
City Cobin	21B3	10	21N	10E	2390
Mt. Gardner	21821P	30	22N	10E	3300
Mt. Gardner Aux.	21822	31	22N	10E	2500
Mt. Lindsay	21816	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fark Cedar	2186	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400

Snoqualmie River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
South Fark Tolt	21B18	26	26N	9E	1900

Skykomish River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Lake Elizabeth	21B19	33	26N	10E	2900

Skagit River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Tap	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeaut Creek Trail	20A1	14	40N	14E	3500
Freezeaut Meadaws (New)	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadaws Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30P	10	35N	14E	4200

Baker River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Komo Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadaw	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500

Noaksack River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Bald Mauntain	21A19a	7	40N	7E	4400
Conyon	21A20A	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panarama New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

OLYMPIC PENINSULA

Dungeness River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Deer Park	2384	1	28N	5W	5200

Marse Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cox Valley	23814	31	29N	6W	4500

Elwha River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Hurricane	23B3	36	29N	7W	4500

Skokomish River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Black ond White	23B7	17	24N	5W	4200
Black and White Lakes	2386	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	2385	28	25N	5W	5200
Sundown Pass	23B8	25	24N	7W	3900

Soleduck River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Deer Lake	23B1	14	28N	9W	3900

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington

April 1, 1979

* *
* The input to the watersheds of Washington and tributary *
* basins during the month of March was subnormal. The result *
* is that the water supply has been reduced from that which *
* was reported last month, but not to the extent as was *
* reported on February 1. Snow cover, as measured near the *
* first of April, indicates a reduction of approximately *
* 20 percent from last month's measurement. Low elevation *
* snow courses are reduced even further due to the total lack *
* of input during the month and in locations where it did *
* occur, precipitation was in the form of rain and not snow. *
* Precipitation, as measured by the National Weather Service, *
* was only 50 to 60 percent of normal over the state with the *
* exception of Southeastern Washington, the only drainage *
* division that had above normal rainfall. Runoff was also *
* subnormal over most of the state with the exception being *
* the Puget Sound Drainage and along the southern portion of *
* the state. The end result is a reduction in water supply *
* forecasts, percentagewise, from that which was reported last *
* month. *
* *

SNOW COVER

Snow packs measured near the first of April range from a high of 6 percent above normal for the Mill Creek Drainage to a low of 77 percent below normal for the Klickitat Drainage. The storm patterns of the last week added considerable amounts of snow to the mountain watersheds but not nearly enough to overcome the deficit experienced throughout the rest of the month. The high temperatures of March depleted the snow pack at the lower elevations and decreased it quite markedly in the upper reaches. Under normal conditions, maximum snow water equivalents occur on April 1; but this year, many maximums occurred March 1. The only rosy spot is in the Blue Mountains of Northeastern Oregon and Southeastern Washington. These areas have above normal snow cover; but even in this area, it has been markedly reduced from that reported last month.

RESERVOIRS

The irrigation reservoirs are generally in pretty good shape for April 1 and with normal subsequent precipitation, should comfortably fill with the spring runoff. The five reservoirs in the Yakima Drainage Basin have water in storage 82 percent of normal. Cle Elum Reservoir is the only one that is down any appreciable amount and this is due to the lowering of the reservoir last winter for maintenance purposes. The two small reservoirs in the Okanogan Drainage have well above normal amounts of water in storage and the power reservoirs are in pretty good shape although Lake Chelan is only 19 percent full, or 71 percent of average as of April 1.

PRECIPITATION

Rainfall, as measured by the National Weather Service, was generally well below normal during March; and winter precipitation is all subnormal with only the Southeastern Drainage Division reported to have near normal amounts of winter rainfall. By drainage divisions, the Columbia above Castlegar had rainfall that was 51 percent of normal; the Pend Oreille-Spokane', 59 percent; Northeastern Washington, 67 percent; Southeastern Washington, 106 percent; Central Washington, 46 percent; the Okanogan Drainage, 29 percent; and on the West Slopes of the Cascades, the Northwestern Slope, 61 percent; and the Southwestern Slope, 53 percent.

STREAMFLOW

The main stem of the Columbia River is holding up pretty good. The Columbia at Birchbank had a flow 99 percent of normal and at International Boundary, 92 percent. On down the stream, the flow at Grand Coulee was 95 percent; below Priest Rapids Dam, 95 percent; and at The Dalles, 103 percent. Other streams that had above normal outflows during the month were the Green, Skykomish, Skagit, Spokane, Yakima, Palouse, Walla Walla, and Cowlitz. Inflow to the five Yakima irrigation reservoirs was better during March than at any time in the last ten years except for 1978 and 1972. Forecasts of streamflow now range from a low of 62 percent of normal in the Cowlitz River to a high of 111 percent for Mill Creek. The Northeastern and Southeastern areas of the state, as well as the Olympic Peninsula, have the best water supply outlook. Numerical forecasts can be found following this narrative.

STREAMFLOW FORECASTS - APRIL 1979

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. These forecasts are made as a product of the cooperative efforts of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1978 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1979	% 15-yr. Avg.	Forecast period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr Average 63-77
COLUMBIA BASIN							
COLUMBIA RIVER SYSTEM							
Columbia River	39300	86	Apr-Sept	44008	31562	53969	45502
at Birchbank 1/	31400	86	Apr-July	34030	23812	38930	36353
	22500	86	Apr-June	24082	18026	25889	26194
Columbia River	56700	83	Apr-Sept	66868	41056	81878	68012
at Grand Coulee 1/	47600	83	Apr-July	54559	32018	63543	57035
	36700	83	Apr-June	41585	25623	47065	44273
Columbia River	62600	85	Apr-Sept	72892	43415	87384	73935
bl. Rock Island Dam 1/	53000	85	Apr-July	60163	34253	68404	62462
	41200	85	Apr-June	46242	27563	50696	48489
Columbia River	81600	79	Apr-Sept	101055	54092	120643	103493
At The Dalles, OR 1/	69700	79	Apr-July	84815	42940	97836	88519
	56300	79	Apr-June	67353	35524	77318	71237
PEND OREILLE RIVER SYSTEM							
Pend Oreille River	12900	81	Apr-Sept	15581	4130	16946	15950
bl. Box Canyon	11900	81	Apr-July	14080	2715	15271	14690
	9500	81	Apr-June	11750	2261	11814	11760
KETTLE RIVER SYSTEM							
Kettle River	1500	81	Apr-Sept	2056	1145	2434	1846
nr. Laurier	1400	80	Apr-July	1877	1105	2112	1754
	1260	79	Apr-June	1686	1037	1826	1588
Colville River	130	97	Apr-Sept	138	26	123	134
at Kettle Falls	120	98	Apr-July	125	22	106	123
	110	96	Apr-June	117	20	98	115

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast Period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr 63-77
SPOKANE RIVER SYSTEM							
Spokane River	2400	82	Apr-Sept	2427	-	3418	2910
at Post Falls, ID 2/	2185	80	Apr-July	2330	-	3275	2733
	2055	79	Apr-June	2199	-	3033	2600
OKANOGAN RIVER SYSTEM							
Similkameen River	1070	71	Apr-Sept	1506	645	1944	1517
nr. Nighthawk	1000	71	Apr-July	1365	605	1720	1417
	845	71	Apr-June	1170	547	1347	1192
Okanogan River							
nr. Tonasket	1150	67	Apr-Sept	1690	708	2185	1719
	1050	67	Apr-July	1500	644	1836	1565
	875	67	Apr-June	1286	583	1382	1305
METHOW RIVER SYSTEM							
Methow River	741	72	Apr-Sept	-	280	1205	1011
nr. Pateros	675	72	Apr-July	-	246	1047	937
	570	72	Apr-June	-	217	802	791
CHELAN RIVER SYSTEM							
Chelan River	940	76	Apr-Sept	1335	599	1466	1237
at Chelan 3/	850	79	Apr-July	1164	481	1184	1080
	650	78	Apr-June	906	403	836	834
Stehekin River	700	77	Apr-Sept	888	494	1010	904
at Stehekin	610	80	Apr-July	750	382	787	764
	460	80	Apr-June	563	311	523	578
Entiat	185	77	Apr-Sept	295	95	310	241
nr. Ardenvoir	170	78	Apr-July	268	81	266	218
	140	80	Apr-June	215	70	190	174
WENATCHEE RIVER SYSTEM							
Wenatchee River	1050	81	Apr-Sept	1311	633	1510	1297
at Plain	950	82	Apr-July	1171	542	1263	1156
	770	85	Apr-June	945	479	891	903
Wenatchee River	1360	77	Apr-Sept	1755	839	2074	1767
at Peshastin	1250	79	Apr-July	1576	730	1746	1587
	950	76	Apr-June	1275	753	1238	1250
Stemilt Basin	115*		May-Sept	-	-	144*	-
nr. Wenatchee							
Icicle Creek	290	79	Apr-Sept	-	-	-	-
nr. Leavenworth	270	79	Apr-July	-	-	-	-
	220	79	Apr-June	-	-	-	-

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr. Average 63-77
YAKIMA RIVER SYSTEM							
Yakima River	125	86	Apr-Sept	106	78	157	145
nr. Martin 4/	115	86	Apr-July	92	67	141	133
	105	92	Apr-June	83	67	117	114
Yakima River	830	78	Apr-Sept	911	493	1091	1062
at Cle Elum 5/	760	78	Apr-July	726	416	980	970
	650	78	Apr-June	636	379	807	838
Yakima River	1600	74	Apr-Sept	2059	802	2521	2168
nr. Parker 6/	1460	75	Apr-July	1691	657	2205	1954
	1290	76	Apr-June	1487	611	1810	1693
Kachess River	110	87	Apr-Sept	101	61	142	126
nr. Easton 7/	105	88	Apr-July	95	55	131	119
	95	91	Apr-June	88	53	109	104
Cle Elum River	400	84	Apr-Sept	411	250	561	479
nr. Roslyn 8/	370	85	Apr-July	369	215	484	435
	310	87	Apr-June	314	193	370	358
Bumping River	110	75	Apr-Sept	117	63	175	146
nr. Nile 9/	100	75	Apr-July	105	55	152	133
	85	80	Apr-June	89	51	109	106
American River	95	75	Apr-Sept		50	132	127
nr. Nile	90	78	Apr-July		44	116	116
	75	79	Apr-June		39	86	95
Tieton River	190	75	Apr-Sept	238	128	302	252
at Tieton Dam 10/	160	75	Apr-July	196	92	242	212
	130	77	Apr-June	156	76	179	168
Naches River	660	74	Apr-Sept	760	327	1046	890
nr. Naches 11/	600	75	Apr-July	657	275	908	802
	530	78	Apr-June	564	245	717	678
Ahtanum Creek	35	74	Apr-Sept		8	51	47
nr. Tampico 12/	32	76	Apr-July		7	45	42
	28	76	Apr-June		6	37	37

4/ Observed flow corrected for storage in Lake Keechelus.
5/ Observed flow corrected for storage in Keechelus, Kachess,and Cle Elum Lakes and diversion by Kittitas Canal.
6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.
7/ Observed flow corrected for storage in Lake Kachess.
8/ Observed flow corrected for storage in Lake Cle Elum.
9/ Observed flow corrected for storage in Bumping Lake.
10/ Observed flow corrected for storage in Rimrock Lake.
11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.
12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr. Average 63-77
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek at Walla Walla	19.5	111	Apr-Sept		4.5	29.9	17.5
Lewis River at Ariel 13/	900	69	Apr-Sept	1134	1030	1285	1301
	790	70	Apr-July	946	832	1130	1131
	710	71	Apr-June	850	763	990	995
Cowlitz River bl. Mayfield Dam	1370	65	Apr-Sept		1570	2296	2125
	1220	66	Apr-July		1293	1963	1853
	1040	67	Apr-June		1168	1584	1552
Cowlitz River at Castle Rock 14/	1710	62	Apr-Sept	2310	2157	2924	2767
	1520	63	Apr-July	1886	1766	2493	2401
	1300	64	Apr-June	1616	1601	2063	2028
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River nr. Sequim	145	91	Apr-Sept		97	160	160
	115	88	Apr-July		75	128	130
	85	89	Apr-June		61	91	96
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River at Newhalem 15/	1520	69	Apr-Aug		1155	3003	2212
	1655	70	Apr-Sept		728	2943	2356
	1340	68	Apr-July		535	2322	1972
	990	67	Apr-June		429	1595	1485
ELWHA RIVER SYSTEM							
Elwha River nr. Port Angeles	505	91	Apr-Sept		370	614	553
	410	90	Apr-July		295	492	454
CEDAR RIVER SYSTEM							
Cedar River nr. Cedar Falls	70	75	Apr-Sept		55	91	93
GREEN RIVER SYSTEM							
Green River bl. Howard Hanson Dam 16/	290	75	Mar-Sept		305	442	387

13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1979, as percent of the same date in 1978 and 1977 and average of record.

Tributary Basin	No. of Courses Average	1979 Snow Water Expressed as percent of 1978	1977	1973-88 Avg.
UPPER COLUMBIA BASIN				
Pend Oreille	18	114	175	84
Kettle	15	63	101	60
Colville	4	122	191	96
Spokane	15	123	190	87
Sanpoil	1	71	143	57
Okanogan	37	69	122	64
Methow	7	37	112	34
Chelan	1	58	110	67
Entiat	9	58	176	63
Wenatchee	9	100	267	84
Yakima	15	102	240	69
Ahtanum	2	85	204	70
LOWER COLUMBIA				
Mill Creek	3	314	209	106
Klickitat	1	-	-	23
Cowlitz	2	95	201	68
PUGET SOUND				
White	3	92	186	70
Green	5	180	182	76
Cedar	6	270	116	48
Snoqualmie	3	185	167	74
Skykomish	3	126	172	75
Skagit	15	140	169	68
Nooksack	5	182	124	74
OLYMPIC PENINSULA				
Morse Creek	1	110	139	70
Elwha	1	147	124	65
Dungeness	1	165	152	83

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured April 1 1979	1978	1977	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	152.1	277.8	30.3	121.6
Columbia	Franklin D. Roosevelt Lake	5232.0	1879.4	1842.8	1673.1	1260.0
Columbia	Banks Lake	714.9	650.7	682.9	566.1	590.8
Okanogan	Conconully Reservoir	13.0	10.6	4.2	8.8	7.2
Okanogan	Salmon Lake	10.5	10.5	6.2	9.3	7.5
Chelan	Lake Chelan	676.1	131.6	156.0	205.4	184.6
		YAKIMA				
Yakima	Keechelus Lake	157.8	101.9	158.0	91.0	108.8
Kachess	Kachess Lake	239.0	207.9	215.9	214.4	189.8
Cle Elum	Lake Cle Elum	436.9	128.4	315.0	431.0	292.1
Bumping	Bumping Lake	33.7	11.5	24.4	13.6	8.6
Tieton	Rimrock Lake	198.0	154.4	169.3	139.8	142.2
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	688.3	729.5	468.1	754.4
Skagit	Diablo Reservoir	90.6	88.4	86.8	87.1	85.7
Skagit	Gorge Reservoir	9.8	8.0	8.3	8.3	8.0

1/ Based on Active Storage

* 15-Yr. Average 1963-1977

SOIL MOISTURE - APRIL

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content Inches as of April 1 1979	1978	1977
OKANOGAN							
Salmon Meadows	19A2M	4500	48	5.4	-	-	2.0
Trout Creek	3-M	3600	48	7.3	-	5.1	3.5
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	9.5	9.0	6.9
Helmers	17C2M	4400	48	12.0	9.7	9.5	9.3
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	12.5	7.1	7.9

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content (Inches) as of Oct. 1 1978	1977	1976
OKANOGAN							
Salmon Meadows	19A02M	4500	48	5.4	-	-	3.4
Trout Creek	3-M	3600	48	7.3	3.7	3.2	3.4
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	5.9	-	-
Helmers	17C2M	4400	48	12.0	8.2	-	-
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	10.3	6.6	-

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct Observed	FALL 1978 2/ Departure	WINTER Nov. 1978 - Mar. 1979 2/ Observed	WINTER Departure
Columbia in Canada	6.29	+1.27	12.00	-3.51
Pend Oreille - Spokane	2.09	-1.95	13.90	-4.36
Northeastern Washington	1.74	-0.73	7.27	-2.13
Southeastern Washington	1.22	-1.29	9.82	-0.61
Central Washington	0.60	-0.37	3.34	-1.94
North Central Washington	2.22	+0.63	3.78	-2.76
Northwest Slope Cascades	9.89	-3.32	43.16	-12.23
Southwest Slope Cascades	6.18	-2.50	26.74	-14.90

Northeastern Washington - Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.

Southeastern Washington - Touchet, Tucannon and Palouse Drainages.

Central Washington - Yakima, Wenatchee and Chelan Drainages.

North Central Washington - Methow and Okanogan Drainages.

Northwest Slope Cascades - Puget Sound Drainages.

Southwest Slope Cascades - Lower Columbia Drainages.

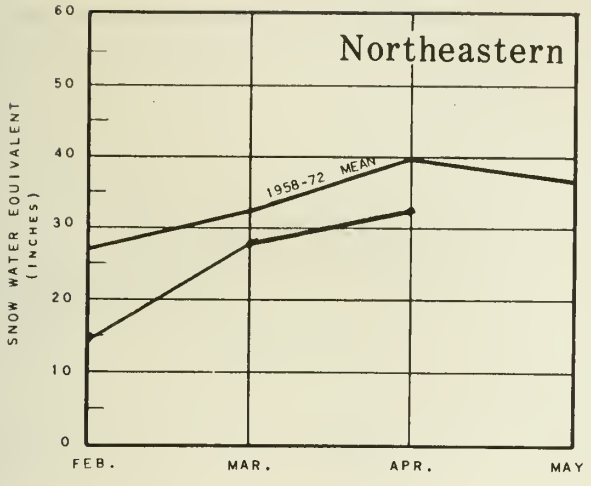
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service.

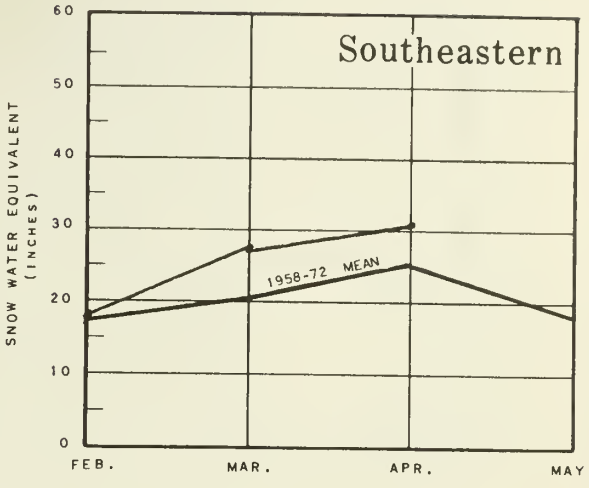
2/ - Departure from 15-year (1958-72) drainage division average.

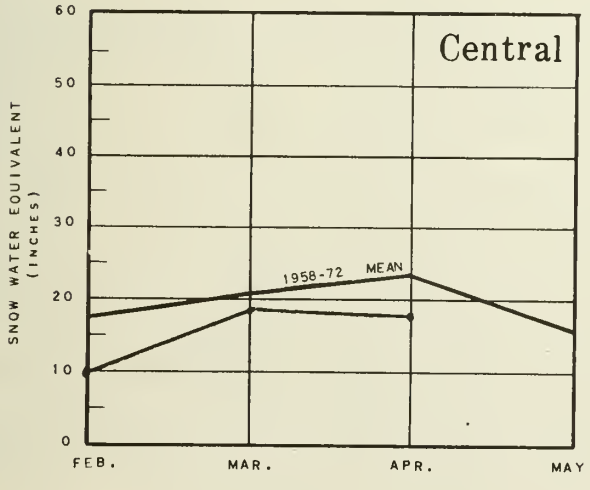
WASHINGTON SNOW COVER

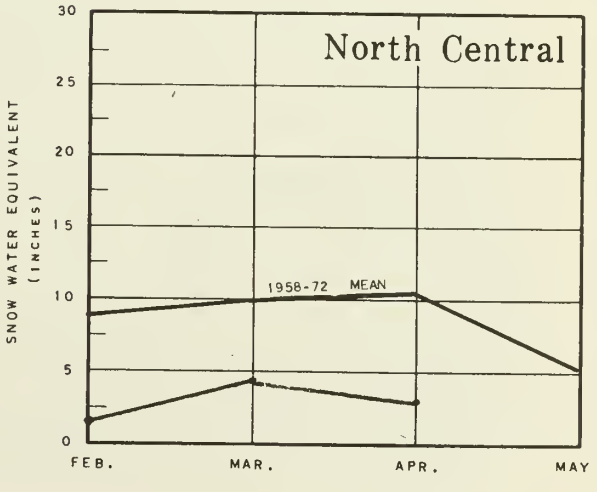
1979

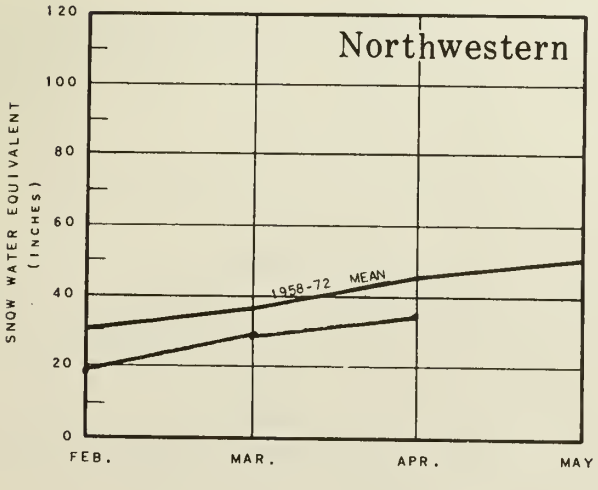
DRAINAGE AREAS

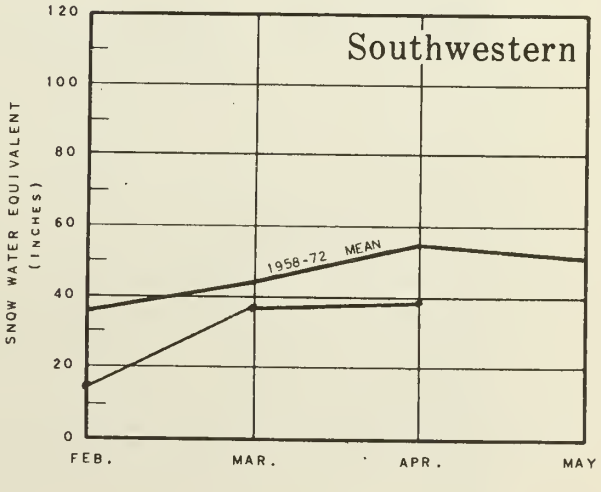










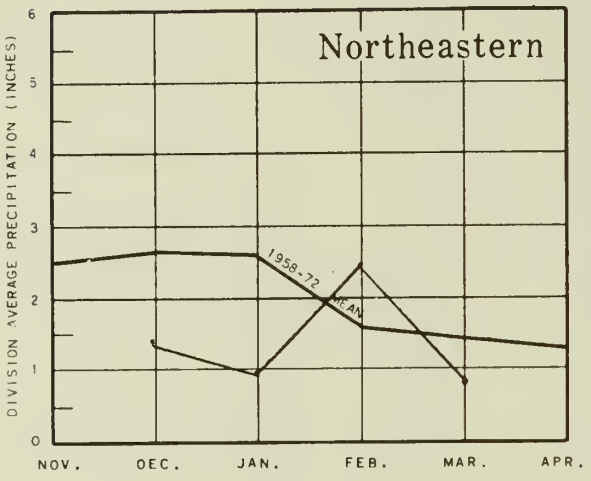


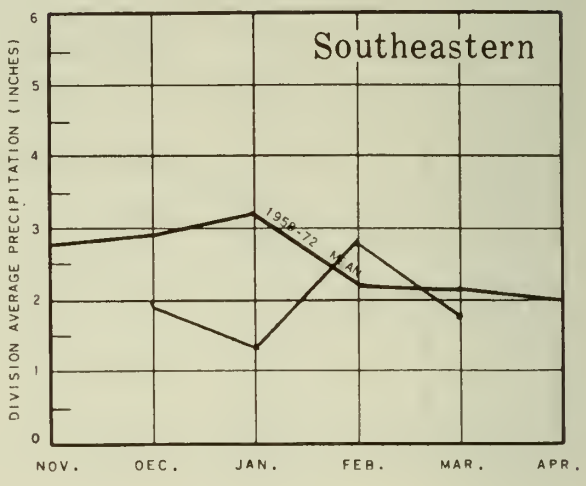
Selected Snow Survey Courses by Soil Conservation Service

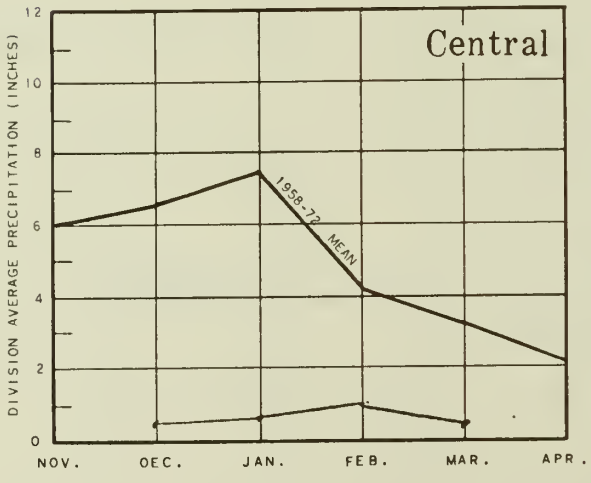
WASHINGTON VALLEY PRECIPITATION

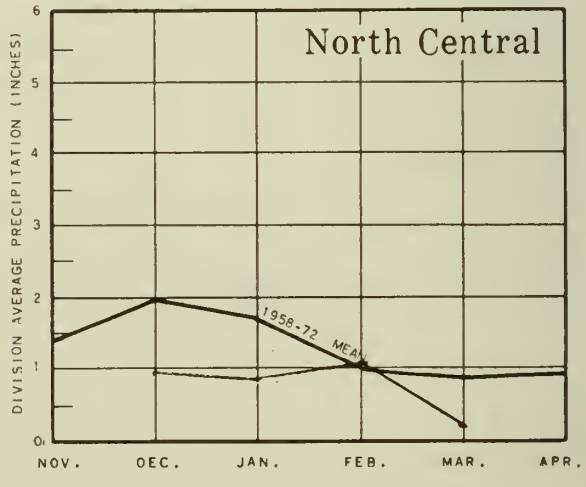
1979

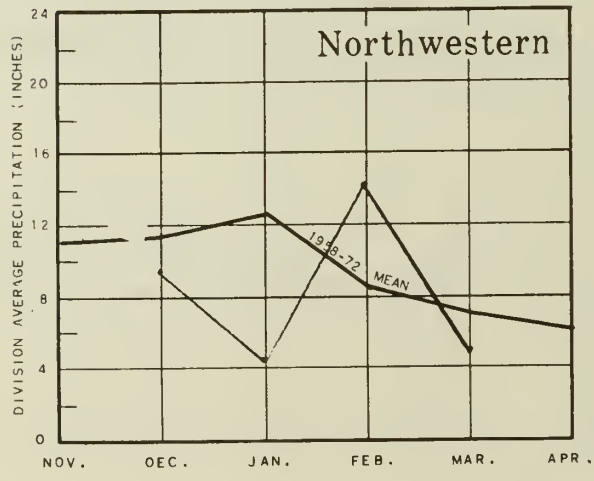
DRAINAGE AREAS

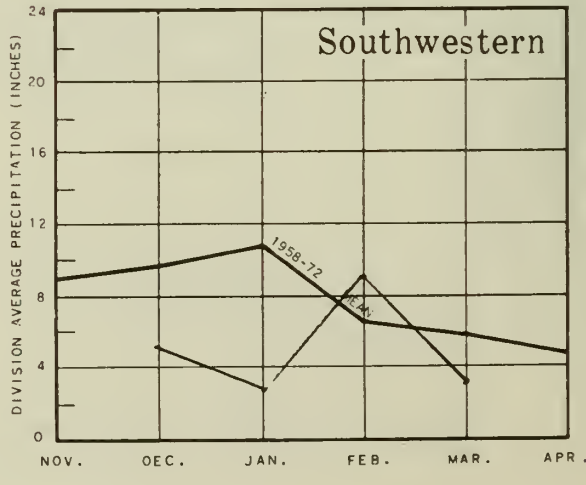






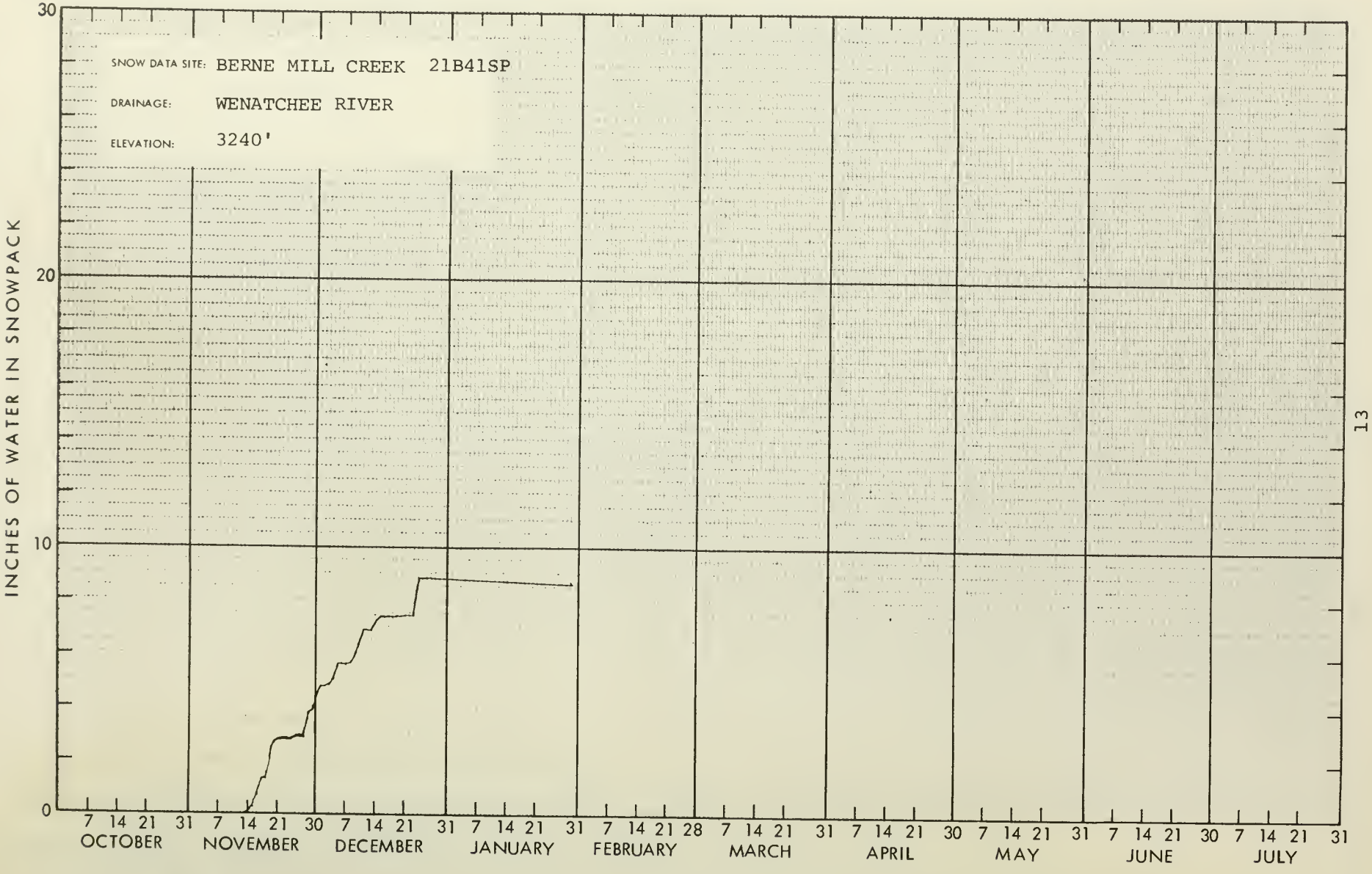






Preliminary Analysis by National Weather Service

WSFB-X138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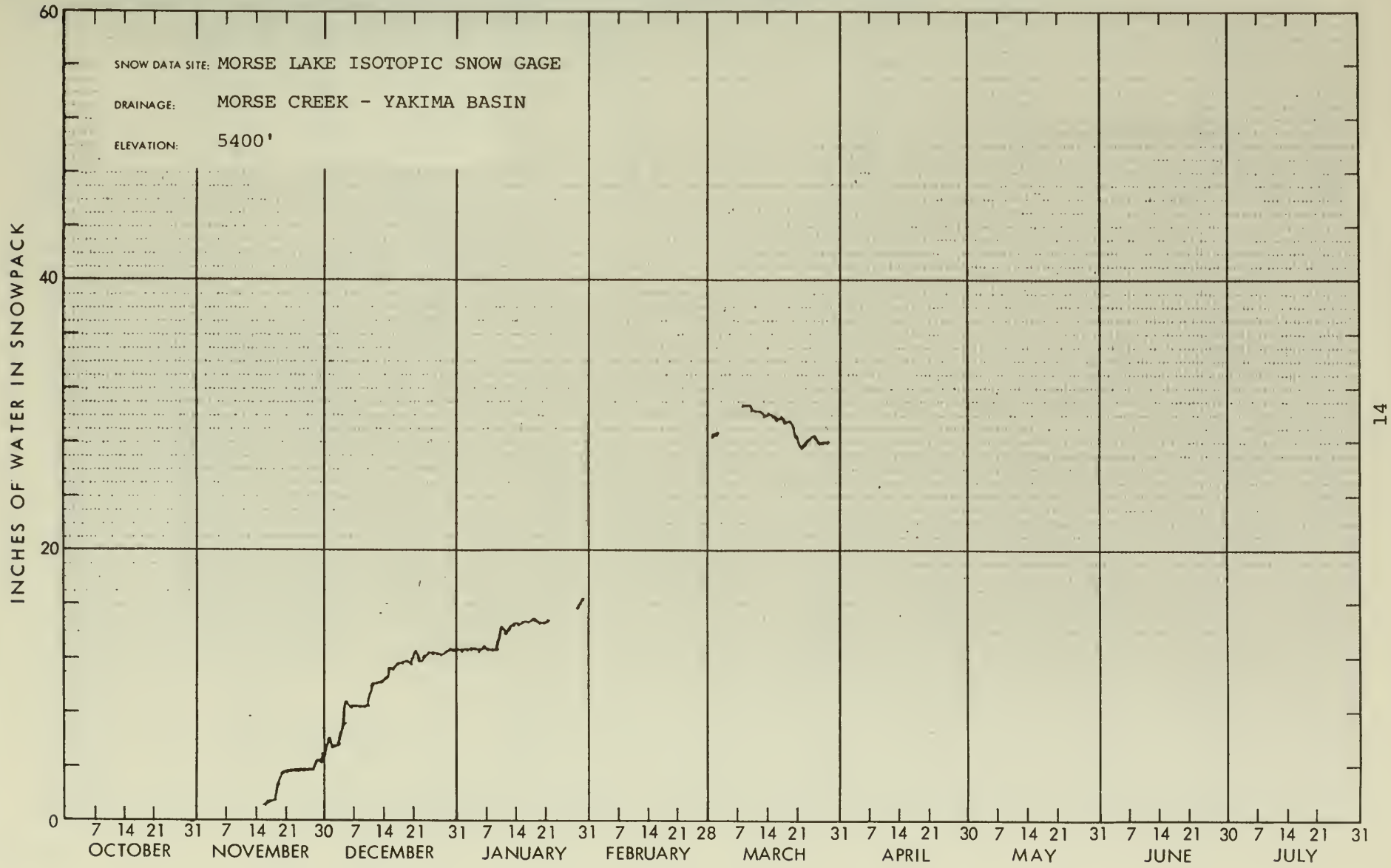
DRAINAGE: WENATCHEE RIVER
ELEVATION: 3240'
INCHES OF WATER IN SNOWPACK
30
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

WSFB-X13C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DRAINAGE: MORSE CREEK - YAKIMA BASIN
ELEVATION: 5400'
INCHES OF WATER IN SNOWPACK
60
40
20
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
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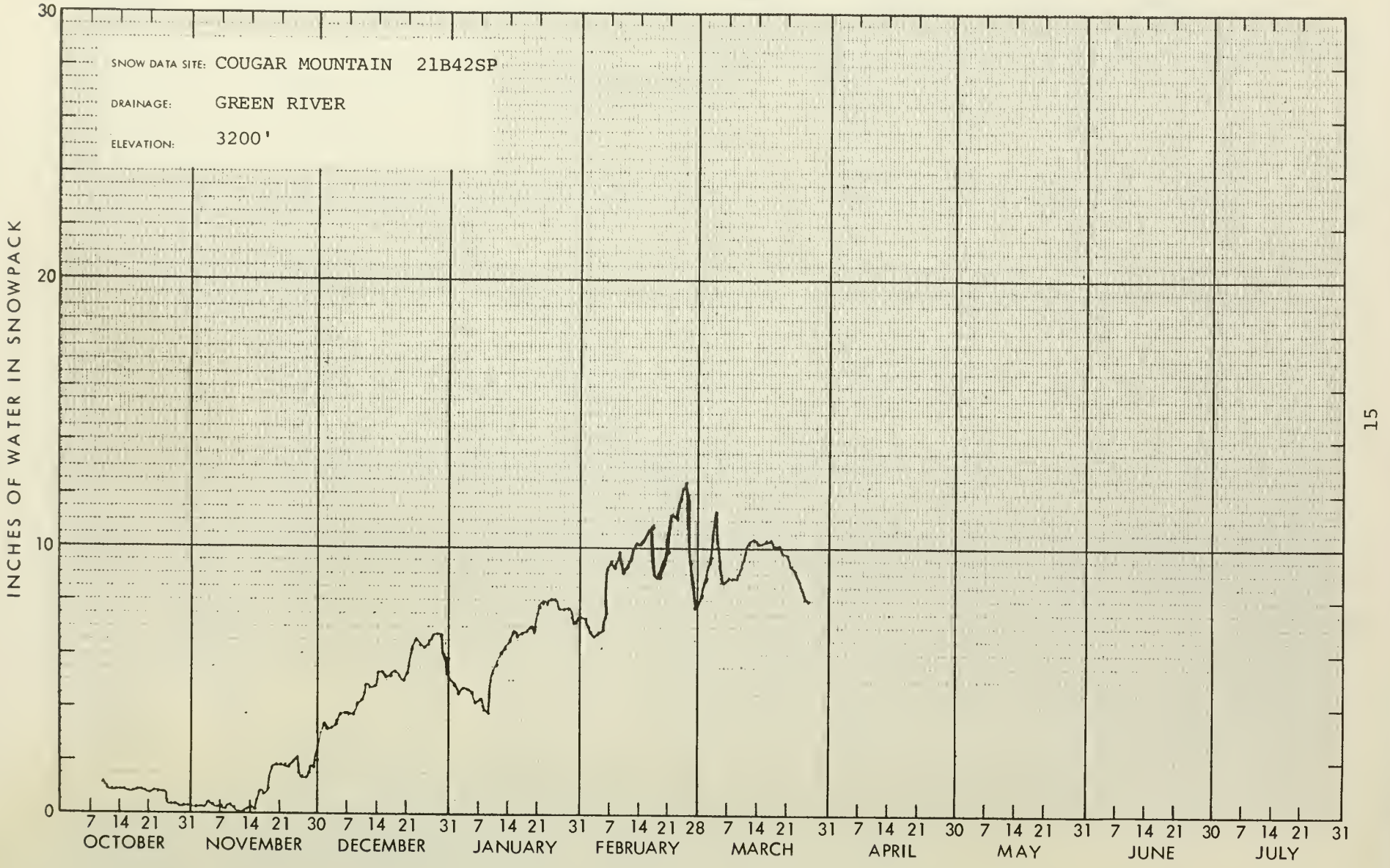
JUNE
JULY

WSFB-X13B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DRAINAGE: GREEN RIVER
ELEVATION: 3200'
INCHES OF WATER IN SNOWPACK
30
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
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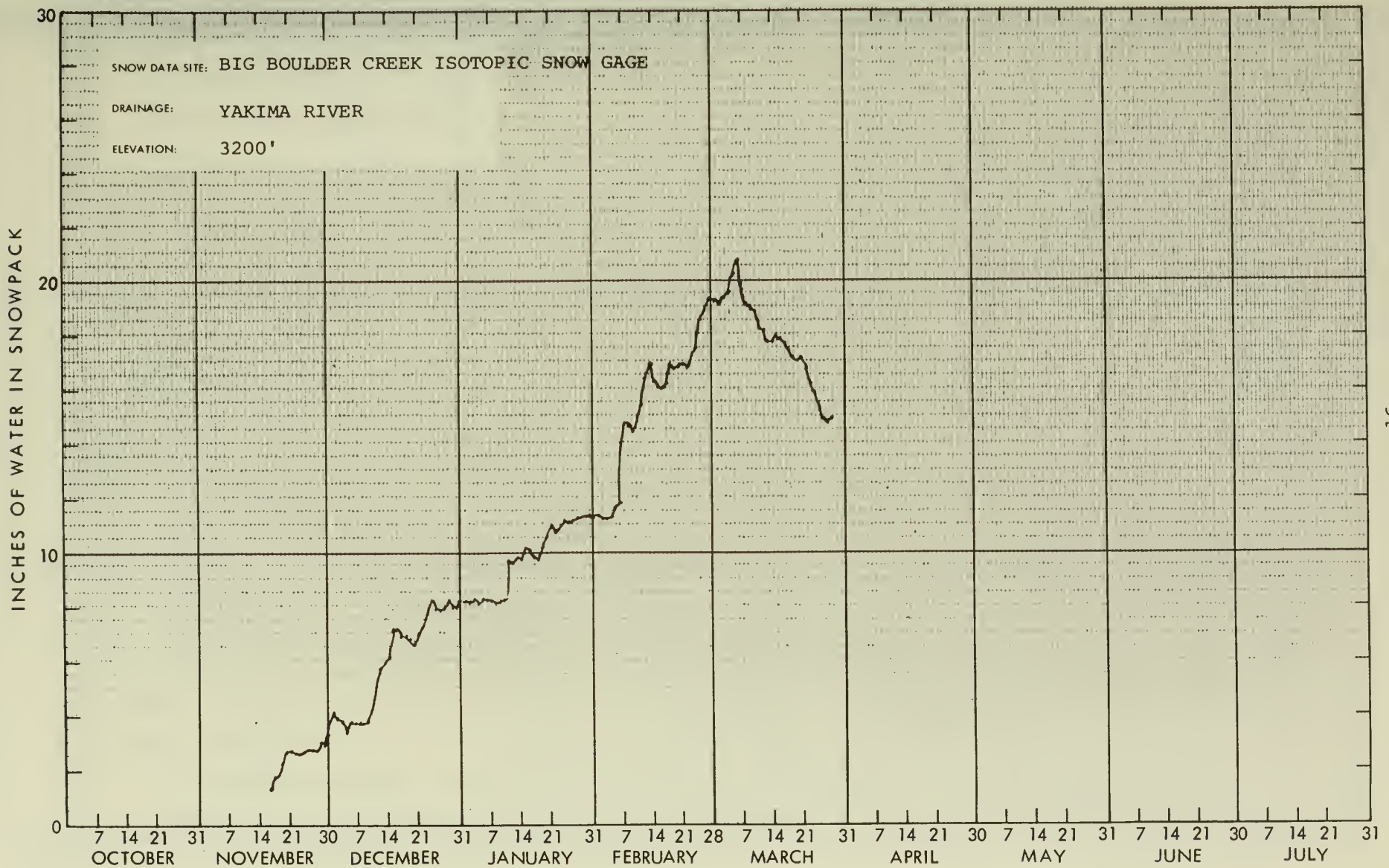
JUNE
JULY
15

WSFB-X13B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DRAINAGE: YAKIMA RIVER
ELEVATION: 3200'
INCHES OF WATER IN SNOWPACK
30
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

SNOW DATA TO APRIL 1, 1979 - APPENDIX 1

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average#
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Baree Creek	15B11	5500	3/30	105	41.9	40.6	50.3
Baree Midway	15B16	4600	3/30	94	35.7	30.6	38.8
Baree Trail	15B15	3800	3/29	26	7.9	5.8	9.8
Benton Meadow	16A02	2344	3/28	14	5.0	1.5	5.0
Benton Spring	16A03	4900	3/28	45	16.6	16.7	20.2
Boyer Mountain	17A02	5250	3/27	55	20.4	25.6	27.2
Brush Creek Timber	14A13	5000	3/28	35	10.5	8.8	10.6
Bunchgrass Meadow	17A01	5000	3/29	58	22.6	29.1	30.7
Chewelah	17A04	4923	3/31	52	17.8	15.5	17.0
Heart Lake Trail	14C10	4800	4/3	71	25.4	18.1	23.8
Hoodoo Basin	15C10	6000	4/3	130	46.1	47.7	53.6
Hoodoo Creek	15C01	5900	4/3	128	45.1	43.5	49.9
Lookout	15B02	5250	3/14	75	28.8	33.8	38.6
			3/30	84	32.4	32.2	37.1
Mosquito Ridge	16A04A	5100	4/3	82	31.0	33.2	40.2
Nelson	19-Can	3050	3/29	41	14.2	12.2	15.7*
Schweitzer Bowl	16A06	4500	4/2	55	22.7	23.1	30.9
Schweitzer Ridge	16A05	6100	4/2	81	32.0	48.2	47.8
Smith Creek	16A01	4800	3/28	85	31.4	37.6	48.8
Winchester Creek	17A03	2970	3/27	26	7.2	9.6	11.2
KETTLE RIVER							
Barnes Creek	90-Can	5300	3/31	55	18.3	20.4	21.1*
Big White Mtn.	154-Can	5500	3/31	54	15.9	21.0	20.9*
Bluejoint Mtn.	244-Can	7500	3/30	62	19.3	28.2	21.5*
Boulder Road	18A02	1450	3/28	0	0.0	0.0	2.4
Butte Creek	18A03	4070	3/28	23	5.7	9.5	9.5
Cabin Creek	18A08	3170	3/28	21	4.8	7.1	8.3
Carmi	126-Can	4100	3/31	16	4.0	6.7	6.7*
Farron # 1	17-Can	4000	3/27	30	8.7	12.8	13.4*
Farron # 2	243-Can	4000	3/27	31	9.0	13.5	13.5*
Goat Creek	18A04	3595	3/28	3	0.8	5.4	5.3
Graystoke Lake	5-Can	5950	3/27	52	15.9	16.2	21.5*
Monashee Pass	48A-Can	4500	3/31	40	13.1	13.8	14.1*
Old Glory Mountain	42-Can	7000	3/30	53	17.2	31.7	28.9*
Snow Caps Creek	18A05	2150	3/28	0	0.0	0.0	2.2
Snow Caps Trail	18A06	2720	3/28	4	1.0	4.1	4.9
Summit G.S.	18A07	4600	3/28	16	4.7	8.0	8.5
Trapping Creek Lower	166-Can	3050	3/31	4	0.9	3.7	3.9*
Trapping Creek Upper	165-Can	4450	3/31	29	9.3	8.3	10.2*

\# Average based on 1963-77 average
* Average for years of record

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1979 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
COLVILLE RIVER							
Baird	17A06	3215	3/29	19	6.5	4.1	5.6
Carlson	18A09	2885	3/31	0	0.0	0.0	2.6
Chewelah	17A04	4925	3/31	52	17.8	15.5	17.0
Stranger Mountain	17A05	4990	3/31	32	11.6	10.8	14.5
Togo	18A10	3370	3/31	34	10.9	10.2	12.9
SPOKANE RIVER							
Above Burke	15B08	6100	3/30	59	22.1	18.5	24.7
Above Roland	15B07	4350	4/4	83	32.6	26.8	35.2
Below Roland	15B06	3770	4/4	41	17.8	11.6	16.5
Copper Ridge	16B02	4800	3/28	65	26.8	16.0	29.7
Forty-nine Meadows	15B03	5000	4/1	76	24.7	19.8	32.5
Fourth of July Summit	16B03	3100	3/13	32	11.6	-	
			3/28	28	8.5	0.0	8.8
Granite Peak	15B13A	6000	4/1	122	36.5	34.4	46.8
Kellogg Peak	16B05A	5560	4/3	75	27.8	24.8	35.4
Lookout	15B02	5250	3/14	75	28.8	33.8	38.6
			3/30	84	32.4	32.2	37.1
Lost Lake	15B14A	6000	4/1	134	40.5	44.3	61.8
Lower Sands Creek	16B01	3400	3/28	59	19.2	16.2	21.9
Mosquito Ridge	16A04A	5110	4/3	82	31.0	33.2	40.2
Roland Summit	15B05A	5200	4/3	91	37.4	36.6	40.1
Sherwin	16C01	3200	3/30	38	14.0	6.6	13.8
Sunset	15B09A	5600	4/3	91	32.0	30.5	36.2
SANPOIL RIVER							
Sherman Creek Pass	18A01	5350	3/29	30	8.6	12.1	15.0
OKANOGAN RIVER							
Aberdeen Lake	6A-Can	4300	3/30	20	6.5	6.1	6.2*
Blackwall Mountain	100-Can	6250	4/2	72	24.4	30.9	35.0*
Bouleau Lake	234-Can	4580	3/25	39	11.2	15.0	15.0*
Brenda Mine	193-Can	4800	3/29	35	9.6	13.3	14.3*
Brookmere	27-Can	3200	3/30	18	5.5	7.6	9.7*
Carrs Landing Upper	168-Can			Late Report		3.1	3.7*
Enderby	130-Can	6250	3/29	76	24.0	42.1	39.8*
Esperon Creek Lower	164-Can	4400	3/30	28	7.9	11.9	12.9*
Esperon Creek Middle	163-Can	4700	3/30	39	11.7	15.8	16.5*
Esperon Creek Upper	162-Can	5400	3/30	42	13.2	18.7	20.4*

\# Average based on 1963-77 average

* Average for years of record

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1979 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Average #
OKANOGAN RIVER (Cont.)							
Freezeout Meadows New	20A38	5000	3/29	69	28.0	24.0	41.0
Graystoke Lake	5-Can	5950	3/27	52	15.9	16.2	21.5*
Hamilton Hill	107-Can	4900	3/27	34	10.6	16.7	15.9*
Harts Pass	20A05A	6500	3/30	88	31.9	47.4	48.7
Horseshoe Basin +	19A05a	7000	4/2	48	14.4	16.3	19.4
Isintok Lake	152-Can	5510	3/25	20	5.5	9.4	8.6*
Lost Horse Mountain	105-Can	6300	3/30	32	6.5	6.8	9.4*
Loup Loup	19A07	4650	3/29	6	1.7	9.4	9.2
McCulloch	4-Can	4200	3/30	20	6.3	5.2	6.7*
Missezula Mountain	106-Can	5100	3/28	23	6.3	11.8	9.1*
Mission Creek	5A-Can	6000	3/27	48	15.8	20.8	20.4*
Monashee Pass	48A-Can	4500	3/31	40	13.1	13.8	14.1*
Mount Kobau	156-Can	5950	3/29	20	4.1	12.4	13.7*
Muckamuck +	19A09a	6390	4/2	32	9.6	17.0	17.9
Mutton Creek No. 1	19A01	5700	3/28	11	3.2	14.6	14.7
Mutton Creek No. 2SP	19A11SP	6000	3/28	-	2.4	16.5	13.0
New Copper Mountain	46A-Can	4300	3/29	11	3.5	2.8	5.2*
New Penticton Res. #2	183-Can	5225	3/30	27	6.3	9.4	9.5*
Nickel Plate Mtn.	47-Can	6200	3/29	26	6.5	10.4	8.3*
Oyama Lake	203-Can	4400	3/29	20	5.4	8.0	7.8*
Paysayten +	20A28a	4300		Not Measured		8.2	18.7
Postill Lake	55-Can	4500	3/30	29	8.3	7.9	9.2*
Quartette Lake	34-Can	4000	3/29	32	11.0	10.6	14.6*
Rusty Creek	19A03	4000	3/30	3	1.0	6.6	6.6
Salmon Meadows	19A02	4500	3/28	10	2.9	9.0	10.1
Silver Star Mountain	99-Can	6050	4/1	61	19.1	32.2	28.9*
Starvation Mtn. +	19A10a	6750	4/2	60	18.0	20.4	20.7
Summerland Reservoir	3A-Can	4200	3/25	27	7.5	9.3	9.4*
Touts Coulee	19A06	2845	3/28	0	0.0	0.0	1.8
Trout Creek	3-Can	4700	3/27	23	5.2	7.3	7.6*
Vaseux Creek	233-Can	4600	3/31	15	3.5	5.6	7.2*
White Rocks Mountain	70-Can	6000	3/29	50	17.7	25.5	23.9*
METHOW RIVER							
Harts Pass	20A05A	6500	3/30	88	31.9	47.4	48.7
Horseshoe Basin +	19A05a	7000	4/2	48	14.4	16.3	19.4
Loup Loup	19A07	4650	3/29	6	1.7	9.4	9.2
Mutton Creek No. 1	19A01	5700	3/28	11	3.2	14.6	14.7
Mutton Creek No. 2 SP	19A11SP	6000	3/28	-	2.4	16.5	13.0
Rusty Creek	19A03	4000	3/30	3	1.0	6.6	6.6
Salmon Meadows	19A02	4500	3/28	10	2.9	9.0	10.1

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1979 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD Water Content (inches) Last Year	Average #
CHELAN LAKE BASIN							
Cloudy Pass +	20A22a	6500		Not Measured		-	49.8
Greenwood Flat +	20A25a	3540		Not Measured		-	25.5
Little Meadows +	20A24a	5275		Not Measured		-	49.0
Lyman Lake	20A23A	5900		Late Report		59.3	65.5
Park Creek Flat +	20A13a	2220		Not Measured		-	26.7
Park Creek Ridge	20A12A	4600		Late Report		46.6	47.0
Petersons +	20A16a	3730		Not Measured		-	34.8
Rainy Pass	20A09	4780	3/30	90	28.0	43.4	43.7
ENTIAT RIVER							
Blue Creek G.S.	20B28a	5425	4/1	72	27.4	45.2	43.5
Brief	20B19	1600	3/27	0	0.0	3.7	4.6
Entiat Meadows +	20A33a	4540	4/1	66	25.1	48.0	49.3
Entiat River Trail +	20A34a	3325	4/1	34	13.9	23.6	18.2
Four Mile Ridge +	20B27a	6800	4/1	60	22.8	45.2	37.8
Fox Camp +	20A36a	6510	4/1	Not Measured		71.6	57.8
Pope Ridge	20B20	3540	3/29	35	14.2	20.7	18.9
Pugh Ridge +	20A32a	6725	4/1	61	23.2	45.7	37.5
Shady Pass	20A37	6200	3/29	52	19.4	36.8	32.9
Snow Brushy +	20A35a	3910	4/1	67	27.5	39.2	40.3
Tommy Creek +	20B21a	4900	4/1	39	14.8	24.5	27.3
WENATCHEE RIVER							
Berne-Mill Creek	21B23	2925	3/14	70	27.3	28.0	26.1
			3/28	64	24.7	27.1	29.8
Berne-Mill Creek New SP	21B41	3240	3/28	51	21.5	18.6	28.3
Blewett Pass No. 2	20B02	4270	3/26	36	13.9	15.6	16.9
Chiwaukum G.S.	20B16	1810	3/14	36	11.9	13.4	11.3
			3/28	31	8.1	8.9	10.2
Fish Lake	21B04	3371	3/28	62	26.6	26.5	35.3
Lake Wenatchee	20B05	1970	3/14	44	15.9	17.0	15.4
			3/28	36	13.0	13.4	12.9
Leavenworth R.S.	20B17	1127	3/13	16	5.2	0.8	2.2
			3/30	0	0.0	0.0	0.6
Lyman Lake	20A23A	5900		Late Report		59.3	65.5
Merritt	20B18	2140	3/14	52	19.0	21.4	16.0
			3/28	45	16.7	12.9	15.5
Stevens Pass	21B01	4070	3/14	100	40.6	50.0	52.3
			3/28	92	40.9	46.3	54.9
Stevens Pass Sand Shed	21B45	3700	3/14	77	31.3	33.5	37.5
			3/28	69	30.4	32.0	39.5

\# Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadis observation

USDA-SCS-PORTLAND OREGON 1973.

SNOW DATA TO APRIL 1, 1979 - APPENDIX 5

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	Average #
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	3/29	25	7.4	7.1	7.9
Scout-A-Vista	20B04	3400	3/29	22	5.3	7.3	7.3
STEMILT CREEK							
Jump-Off	20B08	4450	3/28	28	9.0	10.8	8.2
Stemilt Slide	20B06	5000	3/28	33	11.1	13.7	13.7
Upper Wheeler	20B07	4400	3/28	21	6.9	7.3	8.7
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300	3/28	27	9.3	14.3	15.1
Colockum Creek Lower	20B23	4300	3/28	28	8.8	10.5	9.9
Trough # 2 SP	20B25	5310	3/28	33	10.5	18.0	6.0
YAKIMA RIVER							
Ahtanum R.S.	21C11	3100	3/28	14	4.2	4.4	6.0
Big Boulder Creek	21B09	3200	3/28	36	13.1	10.0	20.1
Blewett Pass No. 2	20B02	4270	3/26	36	13.9	15.6	16.9
Bumping Lake	21C08	3450	3/13	35	11.2	13.6	17.1
			3/29	29	9.5	10.0	16.5
Bumping Lake New	21C36	3400	3/13	46	14.6	16.9	22.0
			3/29	39	13.1	14.5	21.7
Cayuse Pass	21C06	5300	4/5	148	63.5	70.4	90.3
Colockum Pass	20B09	5370	3/28	28	10.2	21.0	16.6
Cooke Creek	20B10	4123	3/28	0	0.0	0.0	5.1
Corral Pass	21B13	6000	3/26	71	31.8	30.5	43.4
Fish Lake	21B04	3371	3/28	62	26.6	26.5	35.3
Green Lake	21C10	6000	3/28	67	24.5	32.5	34.9
Grouse Camp	20B11	5385	3/29	35	14.1	18.4	16.6
High Creek	20B12	2930	3/29	0	0.0	0.0	3.6
Joe Lake +	21B46a	4624		Late Report		51.7	70.6
Lake Cle Elum	21B14M	2200	3/13	24	8.9	6.5	10.0
			3/29	14	4.8	0.0	6.7
Lemah Creek +	21B47a	3327		Late Report		26.5	46.6
Manashtash	20C01	3935	3/30	0	0.0	0.0	3.0
Morse Lake	21C17	5400	3/28	94	39.7	48.7	59.6
Nanum	20B13	2340	3/29	19	5.8	0.0	8.2
Olallie Meadows	21B02	3625	3/26	82	39.0	26.4	51.9
Satus Pass	20D01	4030	3/30	7	2.2	0.0	9.6
Stampede Pass SP	21B10	3860	3/15	92	39.6	43.0	41.5
			4/2	99	41.3	29.8	43.9

\# Average based on 1963-77 average

\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1979 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average #
YAKIMA RIVER (Cont.)							
Trail Creek	20B14	3360	3/28	0	0.0	0.0	0.0
Tunnel Avenue	21B08	2450	3/14	52	19.2	15.5	25.9
			3/28	46	18.0	11.2	24.6
Van Epps Pass +	20B26a	5925		Late Report		43.7	57.5
Walters Flat	20B15	3360	3/29	12	4.2	0.0	5.5
Waptus Lake +	21B49a	3024		Late Report		36.5	44.5
White Pass (E. Side)	21C28	4500	3/12	56	20.1	20.1	25.1
			3/27	51	17.5	17.4	26.0
AHTANUM CREEK							
Ahtanum R.S.	21C11	3100	3/28	14	4.2	4.4	6.0
Green Lake	21C10	6000	3/28	67	24.5	32.5	34.9
LOWER COLUMBIA DRAINAGE							
ASOTIN CREEK							
Spruce Springs	17C04	5700	3/26	58	22.9	18.5	26.4
MILL CREEK							
Homestead	17C01	4030	3/28	22	9.1	0.0	8.9
Martin Springs	17C02	4400	3/28	38	14.9	3.5	14.9
Tollgate	18D3M	5070	3/29	67	30.5	15.1	26.6
KLICKITAT RIVER							
Satus Pass	20D01	4030	3/30	7	2.2	0.0	9.6
COWLITZ RIVER							
Cayuse Pass	21C06	5300	4/5	148	63.5	70.4	90.3
White Pass (E. Side)	21C28	4500	3/12	56	20.1	20.1	25.1
			3/27	51	17.5	17.4	26.0
PUGET SOUND DRAINAGE							
WHITE RIVER							
Cayuse Pass	21C06	5300	4/5	148	63.5	70.4	90.3
Corral Pass	21B13	6000	3/26	71	31.8	30.5	43.4
Morse Lake	21C17	5400	3/28	94	39.7	48.7	59.6

\# Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1979 - APPENDIX 7

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
GREEN RIVER							
Airstrip	21B24	1800	4/5	0	0.0	0.0	2.1
Charley Creek	21B25	1200	4/5	0	0.0	0.0	0.0
Cougar Mountain SP	21B42	3200	3/26	33	15.6	0.0	25.1
Grass Mtn. No. 2	21B27	2900	4/5	26	11.4	0.0	24.3
Grass Mtn. No. 3	21B28	2100	4/5	0	0.0	0.0	4.9
Lester Creek	21B29	3100	4/5	61	23.4	9.3	27.5
Lynn Lake	21B50	4000	4/5	49	21.8	0.0	29.8
Sawmill Ridge	21B31	4700	4/5	80	32.6	22.8	41.6
Snowshoe Butte SP	21B43	5000	3/26	101	45.8	39.4	59.8
Stampede Pass	21B10	3860	3/15	92	39.6	43.0	41.5
			4/2	99	41.3	29.8	43.9
Twin Camp	21B30	4100	4/5	65	27.2	10.7	27.8
CEDAR RIVER							
City Cabin	21B03	2390	3/29	20	7.0	0.0	20.0
Mt. Gardner	21B21	3300	3/28	18	6.5	0.0	19.8
Mt. Lindsay	21B16	2500	3/30	34	11.9	0.0	18.2
Mt. Washington New	21B15	3000	3/28	0	0.0	0.0	10.8
Rex River	21B17	2400	3/29	34	12.1	0.0	17.8
S. F. Cedar	21B06	3000	3/29	26	9.8	0.0	23.2
Tinkham Creek	21B20	3400	3/29	33	12.7	4.7	27.9
SNOQUALMIE RIVER							
Alpine Meadow	21B48	3500	3/28	88	40.2	18.9	55.2
Lake Elizabeth	21B19	2900	3/27	85	37.9	19.3	50.7
Olallie Meadows	21B02	3625	3/26	82	39.0	26.4	51.9
S. F. Tolt	21B18	1900	3/28	0	0.0	0.0	1.5
SKYKOMISH RIVER							
Lake Elizabeth	21B19	2900	3/27	85	37.9	19.3	50.7
Stevens Pass	21B01	4070	3/14	100	40.6	50.0	52.3
			3/28	92	40.9	46.3	54.9
Stevens Pass Sand Shed	21B45	3700	3/14	77	31.3	33.5	37.5
			3/28	69	30.4	32.0	39.5

Average based on 1963-77 average

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1979 - APPENDIX 8

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD Water Content (inches) Last Year	Average #
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	3/31	27	10.1	6.2	15.4
Beaver Pass	21A01	3680	3/31	53	19.1	20.9	35.0
Brown Top Ridge +	21A28a	6000	3/31	103	35.6	55.0	74.2
Cloudy Pass +	20A22a	6500		Not Measured		-	49.8
Devils Park	20A04	5900	3/30	88	32.4	43.8	47.7
Freezeout Creek Trail	20A01	3500	3/29	29	11.1	5.9	13.7
Freezeout Meadows New	20A38	5000	3/29	69	28.0	24.0	41.0
Granite Creek	21A29A	3500	3/30	41	13.8	13.8	22.3
Harts Pass	20A05A	6500	3/30	88	31.9	47.4	48.7
Klesilkwa	35B-Can	3700	3/27	25	9.1	4.4	15.1*
Lyman Lake	20A23A	5900		Late Report		59.3	65.5
Meadow Cabins	20A08	1900	3/30	16	5.8	1.5	6.6
New Hozomeen Lake	21A30	2800	3/29	32	10.8	4.7	15.2
New Tashme	26A-Can	2500	3/27	26	8.8	6.1	10.8*
Quartette Lake	34-Can	4000	3/29	32	11.0	10.6	14.6*
Rainy Pass	20A09	4780	3/30	90	28.0	43.4	43.7
Thunder Basin	20A07	4200	3/30	58	19.9	18.4	24.7
BAKER RIVER							
Dock Butte	21A11A	3800		Late Report		43.2	74.5
Easy Pass	21A07A	5200		Late Report		86.3	88.7
Jasper Pass	21A06A	5400		Late Report		77.6	92.6
Marten Lake	21A09A	3600		Late Report		52.1	82.8
Mount Blum +	21A18a	5800		Late Report		61.6	65.9
Panorama New	21A26	4300	3/11	103	52.3	52.8	72.8
			3/31	104	52.3	53.5	77.0
Rocky Creek	21A12A	2100		Late Report		7.9	34.4
Schreibers Meadow	21A10A	3400		Late Report		37.9	68.8
S. F. Thunder Creek	21A14A	2200		Late Report		0.0	7.9
Watson Lakes	21A08A	4500		Late Report		49.5	72.3

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation.

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1979 - APPENDIX 9

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average #
NOOKSACK RIVER							
Bald Mountain +	21A19a	4400	3/27	96	43.4	38.5	60.0
Canyon +	21A20a	5100	3/27	98	43.9	38.5	73.9
Glacier Creek	21A23	3700	3/29	51	21.5	4.8	19.9
Panorama New	21A26	4300	3/11	103	52.3	52.8	72.8
			3/31	104	52.3	53.5	77.0
Twin Lakes +	21A21a	5200	3/27	116	52.2	38.5	84.4
OLYMPIC PENINSULA							
DUNGENESS RIVER							
Deer Park	23B04	5200	3/27	46	19.1	11.6	22.9
MORSE CREEK							
Cox Valley	23B14	4500	3/29	75	30.8	28.0	44.3
ELWHA RIVER							
Hurricane	23B03	4500	3/29	48	17.5	11.9	26.9

\# Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadia observation

USDA-SCS-PORTLAND OREGON 1973

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
  Corps of Engineers
U. S. Department of Agriculture
  Forest Service
U. S. Department of Commerce
  NOAA, National Weather Service
U. S. Department of the Interior
  Bonneville Power Administration
  Bureau of Reclamation
  Geological Survey
  National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"

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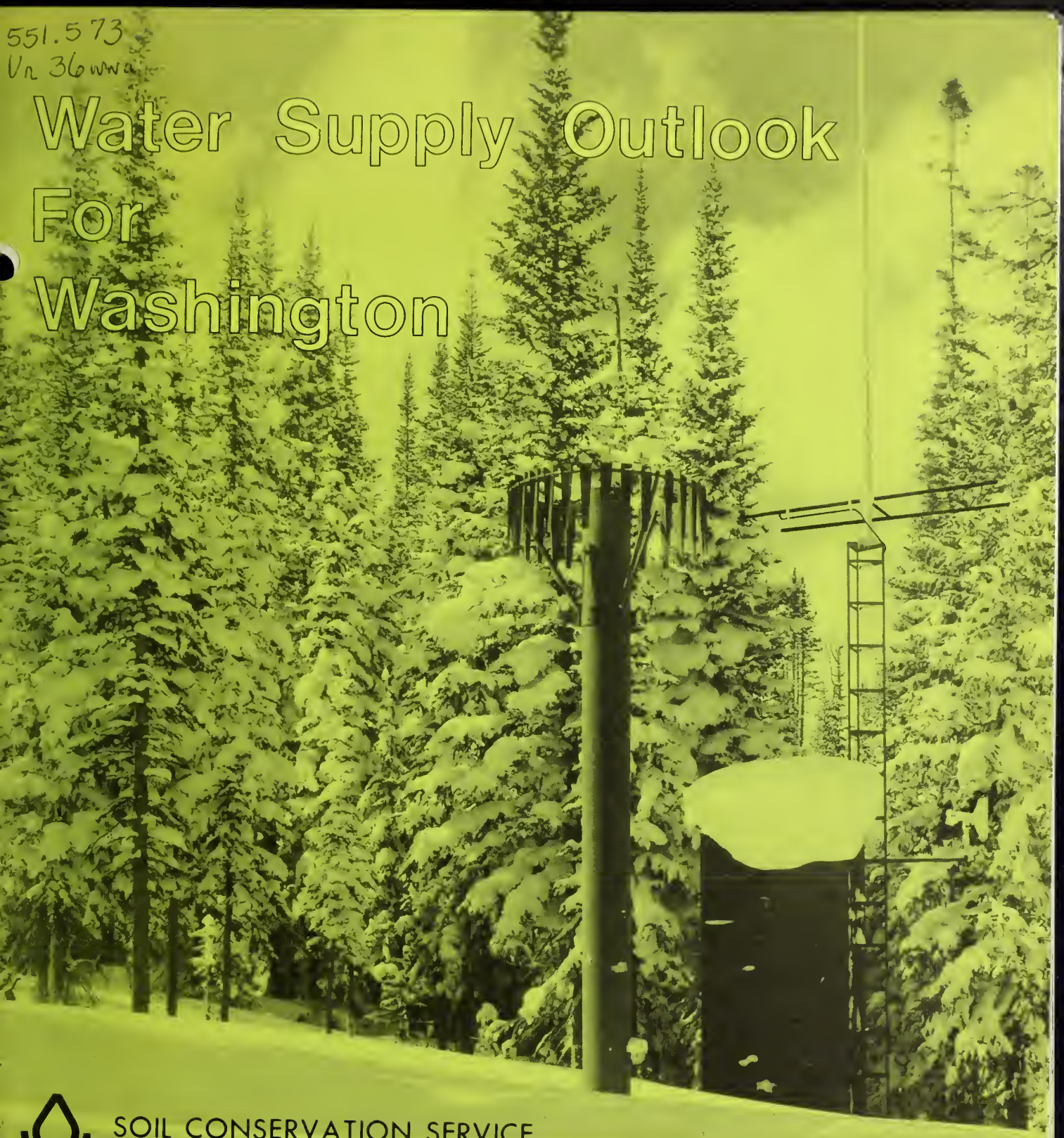
Water Supply Outlook For Washington



SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
MAY 1, 1979

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: VIEW OF A SNOTEL DATA SITE IN THE SNOWY RANGE IN WYOMING. TALL CYLINDRICAL DEVICE IS A PRECIPITATION GAGE. SNOW PILLOWS ON THE GROUND NOT VISIBLE DUE TO SNOW COVER. SHELTER HOUSE, ANTENNA TOWER, ANTENNA, AND TEMPERATURE UNIT ARE VISIBLE BEHIND THE PRECIPITATION GAGE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

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Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

USDA-SCS-PORTLAND OR. 1978

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

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ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON D C

Released by

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SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

WILBUR G HALLAUER
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DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

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SCS PORTLAND OR 1976 W7-L-770784

Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3R 1R7

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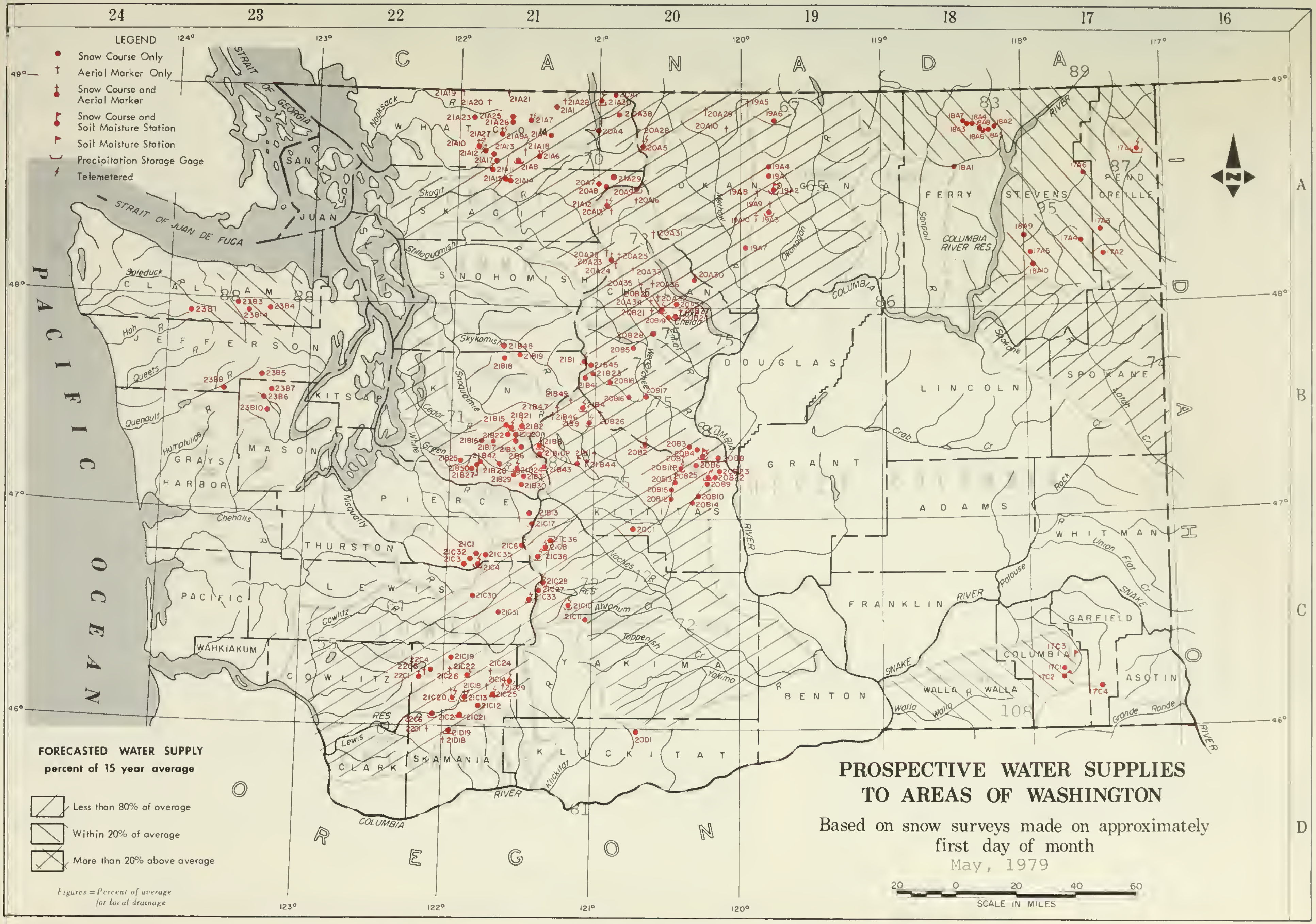

PROSPECTIVE WATER SUPPLIES TO AREAS OF WASHINGTON

Based on snow surveys made on approximately first day of month

May, 1979

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5AP	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	18	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9P	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20828a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20827a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20820P	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20821a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	2082P	35	22N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	20N	20E	5310
Colockum Creek					
Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20B23	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	2083	12	21N	19E	4400
Scout-A-Vista	20B4	18	21N	20E	3400
Stemilt Creek					
Jump-Off	2088	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	2087PM	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9P	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Colockum Pass	2089	25	20N	20E	5370
Cooke Creek	20810	17	19N	20E	4123
Domery Flat	21B44m	15	20N	14E	2200
Fish Lake	21B4P	28	24N	14E	3371
Green Lake	21C10P	3	12N	13E	6000
Grouse Camp	20811P	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21847a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17P	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8P	13	21N	11E	2450
Van Epps Pass	20826a	16	23N	15E	5925
Walters Flat	20815	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28P	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500
LOWER COLUMBIA DRAINAGE					
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Mill Creek					
Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
White Salmon River					
Cultus Creek	21C12	35	7N	8E	4000
Lewis River					
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21P	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25P	28	8N	9E	3500
Lewis River (continued)					
Lone Pine Shelter	21C26P	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldman Pass	21D19P	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20aP	16	8N	7E	3400
Surprise Lakes	21C13AP	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33P	11	13N	11E	5900
Potato Hill	21C14P	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250
PUGET SOUND DRAINAGE					
Nisqually River					
Ghost Forest	21C4P	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	8E	5500
Stem Glade	21C1	13	15N	8E	5050
White River					
Corral Pass	21813	30	18N	11E	6000
Green River					
Airstrip	21824P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21850	22	20N	8E	4000
Sawmill Ridge	21831	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21810P	25	21N	11E	3860
Twin Camp	21830	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Mt. Gardner Aux.	21822	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21817	11	21N	9E	2400
South Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21820	1	21N	10E	3400
Snoqualmie River					
Alpine Meadow	21848	31	27N	9E	3500
Olallie Meadows	2182P	19	22N	11E	3625
South Fork Tolt	21B18	26	26N	9E	1900
Skykomish River					
Lake Elizabeth	21819	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30P	10	35N	14E	4200
Baker River					
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Komo Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Nooksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Ponorama New	21A26	17	39N	9E	4300
Ponorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	2383	36	29N	7W	4500
Skokomish River					
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	2385	28	25N	5W	5200
Sundown Pass	2388	25	24N	7W	3900
Soleduck River					
Deer Lake	2381	14	28N	9W	3900

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

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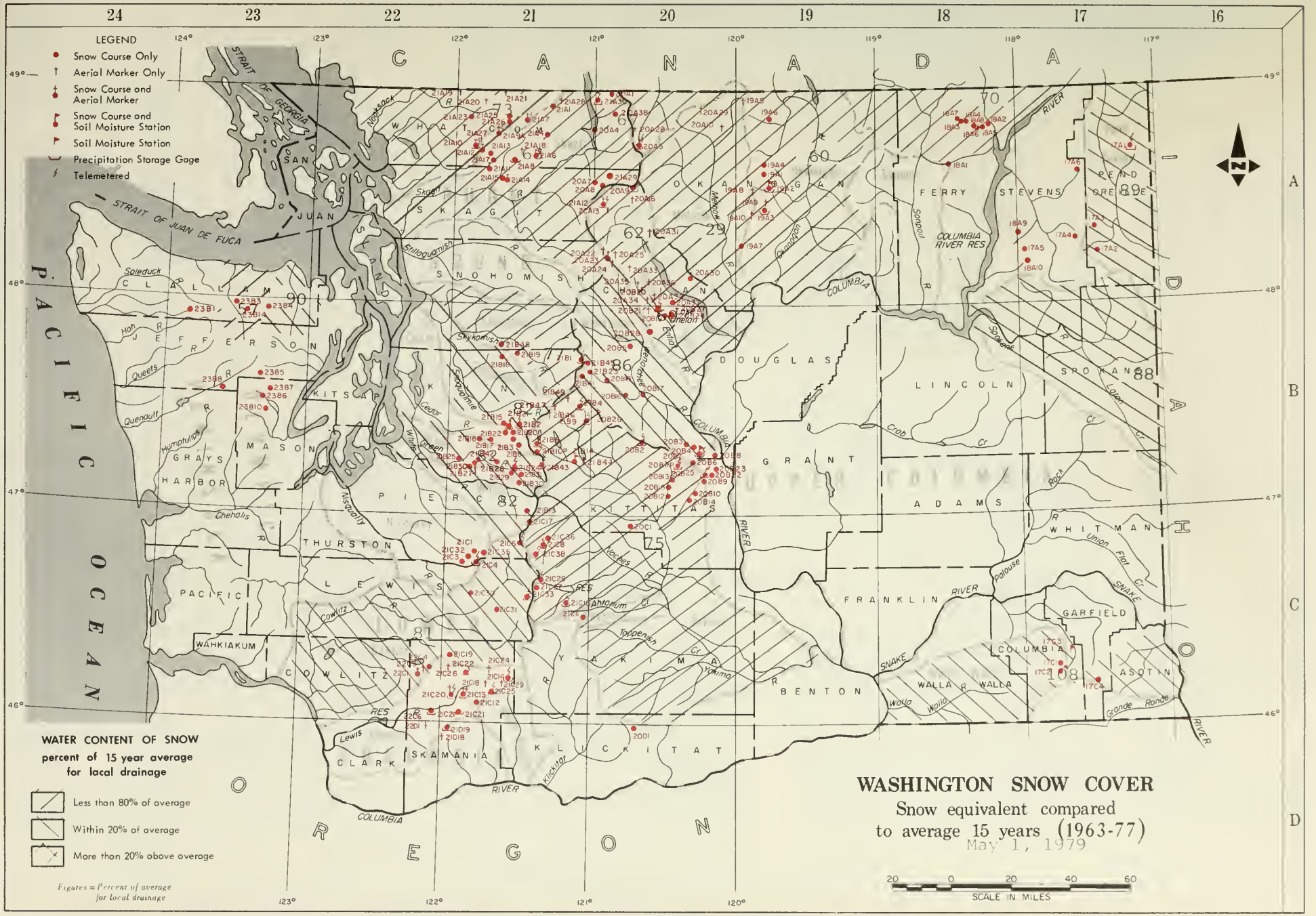

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UPPER COLUMBIA DRAINAGE

Pend Oreille River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meodow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970

Kettle River

Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	2B	39N	35E	4070
Cobin Creek	18A8	5	38N	36E	3170
Goat Creek	1BA4	26	39N	35E	3595
Snow Cops Creek	1BA5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	1BA7	20	39N	35E	4600

Colville River

Baird	17A6	19	36N	42E	3215
Carlson	1BA9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mountoin	17A5	26	31N	38E	4990
Togo	18A10	6	29N	3BE	3370

Sonpoil River

Sherman Creek Pass	18A1	19	36N	35E	5350

Okonogan River

Clork	19A8a	2	36N	23E	7000
Muckomuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	1BE	4300
Rusty Creek	19A3P	1B	35N	24E	4000
Solmon Meodows	19A2PM	33	37N	24E	4500
Starvotion Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845

Methow River

Billy Goat Poss	20A10a	10	3BN	20E	6400
Dollor Wotch	20A29a	8	39N	20E	7000
Harts Poss	20A5AP	7	37N	18E	6500
Horseshoe Basin	19A5o	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650

Chelon Loke Bosin

Cloudy Poss	20A22o	12	31N	15E	6500
Greenwood Flot	20A25a	3	31N	16E	3540
Little Meadows	20A24a	B	31N	16E	5275
Lymon Lake	20A23a	18	31N	16E	5900
Pork Creek Flot	20A13a	19	34N	16E	2220
Pork Creek Ridge	20A12A	18	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Roiny Poss	20A9P	21	35N	17E	4780
Safety Horbor	20A30A	32	31N	20E	6300
Wor Creek Poss	20A31o	34	33N	18E	6500

Entiot River

Blue Creek G.S.	20B28a	19	2BN	1BE	5425
Brief	20B19	34	2BN	19E	1600
Entiot Meodows	20A33a	28	31N	17E	4540
Entiot River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27o	15	28N	19E	6800
Fox Comp	20A36a	17	30N	18E	6510
Pope Ridge	20B20P	22	29N	1BE	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	1BE	3540
Pugh Ridge	20A32o	34	30N	18E	6725
Shady Poss	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21o	10	2BN	1BE	4900

Wenatchee River

Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Poss No. 2	20B2P	35	22N	17E	4270
Chiwoukum G. S.	20B16	4	25N	17E	1B10
Lake Wenatchee	20B5	33	27N	17E	1970
Leovenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B1B	4	26N	16E	2140
Stevens Poss	21B1P	14	26N	13E	4070
Stevens Poss Sond Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	20N	20E	5310

Colockum Creek

Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20B23	1	20N	20E	4300

Squilchuck Creek

Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Visto	20B4	1B	21N	20E	3400

Stemilt Creek

Jump-Off	20BB	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400

Yakimo River

Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9P	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Colockum Poss	20B9	25	20N	20E	5370
Cooke Creek	20B10	17	19N	20E	4123
Domery Flot	21B44m	15	20N	14E	2200
Fish Lake	21B4P	2B	24N	14E	3371
Green Lake	21C10P	3	12N	13E	6000
Grouse Camp	20B11P	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Loke Cle Elum	21B14M	15	20N	14E	2200
Lemoh Creek	21B47o	7	23N	13E	3327
Monostosh	20C1	24	17N	16E	3935
Morse Lake	21C17P	6	16N	11E	5400
Nonum	20B13	4	20N	19E	3875
Troil Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8P	13	21N	11E	2450
Von Epps Poss	20B26a	16	23N	15E	5925
Wolters Flot	20B15	22	20N	19E	3360
Woptus Lake	21B49a	12	23N	13E	3024
White Poss (East Side)	21C2BP	2	13N	11E	4500
White Pass (Leoch Lake)	21C27	1	13N	11E	4500

LOWER COLUMBIA DRAINAGE

Asotin Creek

Spruce Springs	17C4	9	BN	40E	5700

Mill Creek

Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Mortin Springs (Helmers SM)	17C2M	23	9N	40E	4400

Klickitot River

Sotus Poss	20D1	21	6N	17E	4030

White Solmon River

Cultus Creek	21C12	35	7N	8E	4000

Lewis River

Blue Lake	21C22o	19	9N	8E	4800
Bob's Trail	21C21P	25	8N	7E	2200
Colomity Ridge	22D1o	B	5N	5E	2500
Council Poss	21C18a	24	9N	9E	4200
Divide Meodow	21C29a	21	9N	10E	5600
Grand Meodow	21C25P	28	BN	9E	3500

Lewis River (continued)

Lone Pine Shelter	21C26P	B	9N	7E	3800
Morble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldman Poss	21D19P	22	6N	7E	3100
Ploins of Abrahom	22C1o	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meodow	21C20aP	16	8N	7E	3400
Surprise Lakes	21C13AP	14	7N	8E	4250
Toble Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000

Cowlitz River

Coyuse Poss	21C6	15	16N	10E	5300
Mosquito Meodows	21C19	33	10N	7E	4100
Ohanopecosh	21C32	28	15N	10E	2200
Pockwood Loke	21C31	21	13N	10E	2870
Pigtoil Peak	21C33P	11	13N	11E	5900
Potato Hill	21C14P	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

Nisqually River

Ghost Forest	21C4P	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Poradise Pork (New)	21C35	13	15N	8E	5500
Stem Glode	21C1	13	15N	8E	5050

White River

Corral Poss	21B13	30	1BN	11E	6000

Green River

Airstrip	21B24P	18	20N	11E	1800
Chorley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Poss	21B10P	25	21N	11E	3860
Twin Camp	21B30	1B	19N	11E	4100

Cedor River

City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Woshington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fork Cedor	21B6	24	21N	10E	3000
Tinkhom Creek	21B20	1	21N	10E	3400

Snoquolmie River

Alpine Meadow	21B4B	31	27N	9E	3500
Ollollie Meadows	21B2P	19	22N	11E	3625
South Fork Tolt	21B1B	26	26N	9E	1900

Skykomish River

Lake Elizobeth	21B19	33	26N	10E	2900

Skogit River

Beover Creek Trail	21A4	35	39N	12E	2200
Beover Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Pork	20A4	34	3BN	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meodows (New)	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meodows Cobins	20AB	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2B00
Thunder Basin	21A30P	10	35N	14E	4200

Boker River

Baker Poss	21A27o	1	37N	7E	4900
Dock Butte	21A11A	B	36N	8E	3800
Eosy Poss	21A7A	19	39N	11E	5200
Josper Poss	21A6A	17	38N	11E	5400
Komo Kulshon	21A17	31	37N	9E	800
Morten Loke	21A9A	23	38N	BE	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meodow	21A10AP	18	37N	BE	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	BE	1600
Three Mile Creek	21A15	1B	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500

Nooksock River

Bald Mountoin	21A19a	7	40N	7E	4400
Conyon	21A20A	20	40N	8E	5100
Glocier Creek	21A23	9-10	38N	7E	3700
Ponorama New	21A26	17	39N	9E	4300
Ponorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21o	16	40N	9E	5200

OLYMPIC PENINSULA

Dungeness River

Deer Pork	23B4	1	28N	5W	5200

Morse Creek

Cox Volley	23B14	31	29N	6W	4500

Elwha River

Hurricane	23B3	36	29N	7W	4500

Skokomish River

Block and White	23B7	17	24N	5W	4200
Block and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	28	25N	5W	5200
Sundown Poss	23B8	25	24N	7W	3900

Soleduck River

Deer Lake	23B1	14	28N	9W	3900

LEGEND

21A7	Snow Course Only
21A7a	Aeriel Marker Only
21A7A	Snow Course And Aeriel Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

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WATER SUPPLY OUTLOOK

State of Washington

May 1, 1979

****
* There was very little change, percentagewise, in the snow *
* pack from that which was reported last month. Of course the *
* snow water equivalent is a lot less and fewer snow courses *
* were measured, but the remaining sites indicate that the *
* snow pack continues to be mostly subnormal except in the *
* southeastern portion of the state. This means that the *
* water supply outlook will be just about the same as last *
* month. River flows were mostly below normal; precipitation *
* was mostly below normal; and temperatures were mostly below *
* normal. This delayed runoff will help in meeting the water *
* needs of the users later in the summer water-use season. *
* *
****

SNOW COVER

Considerably fewer snow courses are measured on May 1 than were measured on April 1, and those snow courses that are measured are generally at the upper elevations. The range of snow pack now extends from a low of 29 percent of normal for the Methow River to a high of 8 percent above normal for the Asotin Creek in southeastern Washington. One of the key watersheds is the Okanogan Drainage, measured by thirty snow courses. This watershed has a snow pack that is 63 percent of last year, 90 percent greater than 1977, and 60 percent of average. The Yakima Drainage, measured by fifteen snow courses, has a snow pack that is 71 percent greater than was measured last year at this time, 163 percent greater than was measured in 1977, yet still 25 percent below normal. On the west side, the Skagit Drainage, as measured by fourteen snow courses, has a snow pack that is 32 percent greater than last year's measurements, 255 percent greater than was measured in 1977, but 33 percent below normal. On the Olympic Peninsula, the snow pack has improved, percentagewise, about 8 percent.

RESERVOIRS

The five irrigation reservoirs in the Yakima Basin have 91 percent of normal water in storage as of May 1. This includes Cle-Elum Reservoir which will be unavailable for irrigation water storage this summer. The remaining four reservoirs have better than normal amounts of water in storage now. The power reservoirs generally are in good shape compared to normal, with only the Chelan Lake storage being below normal, and that 25 percent below. In all probability all reservoirs will fill with the spring runoff.

PRECIPITATION

As reported by the National Weather Service, rainfall was spotty throughout the state of Washington and the Columbia Basin. In the Drainage Division above Castlegar, rainfall was 11 percent below normal. In the Pend Oreille-Spokane Drainage Division, precipitation was 9 percent above normal; while northeastern Washington was 1 percent below normal. The bright spot for April precipitation was southeastern Washington which had rainfall 36 percent above normal. Along the eastern slopes of the Cascades, precipitation was 72 percent, and on the western slopes of the Cascades, 88 percent.

STREAMFLOW

During the month os April, river flows were generally below normal except for those areas that had above normal precipitation. Flows range from a low of 52 percent below normal for the Klickitat River, as measured near Pitt, to a high of 18 percent above for the Walla Walla River as measured at Touchet. Forecasted streamflows for the 1979 irrigation season now range from a low of 55 percent of normal for the Cowlitz at Castlerock to a high of 8 percent above normal for Mill Creek as measured at Walla Walla. Most streamflow forecasts range in the 70-80 percent of normal category. Numerical forecasts can be found on the following pages.

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STREAMFLOW FORECASTS - MAY 1979

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. These forecasts are made as a product of the cooperative efforts of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1978 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Forecast period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr Average 63-77
COLUMBIA BASIN							
COLUMBIA RIVER SYSTEM							
Columbia River	37900	89	May-Sept	40601	29012	50710	42769
at Birchbank 1/	29900	89	May-July	30622	21262	35671	33621
	20900	89	May-June	20674	15476	22629	23461
Columbia River	52800	86	May-Sept	58882	36594	73869	61503
at Grand Coulee 1/	43500	86	May-July	46573	27557	55534	50526
	32500	86	May-June	33599	21162	39056	37764
Columbia River	58400	87	May-Sept	64144	38555	78958	67050
bl. Rock Island Dam 1/	48400	87	May-July	51416	29394	59978	55578
	36200	87	May-June	37495	22704	42270	41605
Columbia River	74100	81	May-Sept	85792	46862	104523	90981
at The Dalles, OR 1/	62000	82	May-July	69552	35710	81716	76007
	48200	82	May-June	52090	28294	61198	58725
PEND OREILLE RIVER SYSTEM							
Pend Oreille River	11900	87	May-Sept				13595
bl. Box Canyon	10700	87	May-July				12286
	8900	87	May-June				10230
KETTLE RIVER SYSTEM							
Kettle River	1340	83	May-Sept	1682	973	2197	1616
nr. Laurier	1265	83	May-July	1504	933	1875	1524
	1100	81	May-June	1313	865	1589	1358
Colville River	80	95	May-Sept		17	82	84
at Kettle Falls	69	95	May-July		13	66	73
	60	92	May-June		12	58	65

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast period	1978	1977	1976	15-Yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
SPOKANE RIVER SYSTEM							
Spokane River	1550	74	May-Sept			2842	2102
at Post Falls, ID 2/	1450	74	May-July			2699	1966
	1350	74	May-June			2457	1833
OKANOGAN RIVER SYSTEM							
Similkameen River	966	67	May-Sept	1377	558	1859	1440
nr. Nighthawk	900	67	May-July	1236	517	1635	1339
	780	70	May-June	1041	460	1262	1114
Okanogan River	1030	65	May-Sept	1513	617	2055	1595
nr. Tonasket	940	65	May-July	1323	553	1706	1441
	800	68	May-June	1109	492	1252	1180
METHOW RIVER SYSTEM							
Methow River	655	70	May-Sept		255	1121	938
nr. Pateros	605	70	May-July		221	963	864
	495	69	May-June		192	718	718
CHELAN RIVER SYSTEM							
Chelan River	850	75	May-Sept	1179	510	1365	1139
at Chelan 3/	750	76	May-July	1008	392	1083	982
	575	78	Apr-June	750	314	735	736
Stehekin River	610	73	May-Sept	795	422	960	838
at Stehekin	515	74	May-July	656	310	737	698
	380	74	May-June	469	239	473	512
Entiat	170	75	May-Sept	264	80	290	227
nr. Ardenvoir	155	76	May-July	237	65	247	204
	125	79	May-June	185	54	170	159
WENATCHEE RIVER SYSTEM							
Wenatchee River	890	76	May-Sept	1115	506	1394	1172
at Plain	800	78	May-July	975	414	1148	1032
	630	80	May-June	749	352	776	778
Wenatchee River	1200	75	May-Sept	1490	673	1903	1595
at Peshastin	1040	74	May-July	1311	564	1576	1414
	830	77	May-June	1010	487	1067	1077
Stemilt Basin	110*	80	May-Sept			144*	
nr. Wenatchee							

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

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Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast period	Seasonal Streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr. Average 63-77
YAKIMA RIVER SYSTEM							
Yakima River	100	82	May-Sept	79	50	136	122
nr. Martin 4/	90	82	May-July	66	39	120	110
	76	84	May-June	57	39	96	91
Yakima River	690	75	May-Sept	634	352	929	915
at Cle Elum 5/	600	73	May-July	562	276	817	822
	520	75	May-June	471	238	645	691
Yakima River	1300	72	May-Sept	1504	596	2116	1815
nr. Parker 6/	1150	72	May-July	1218	451	1800	1601
	1000	75	May-June	1014	405	1404	1340
Kachess River	90	86	May-Sept	76	40	120	105
nr. Easton 7/	85	87	May-July	70	33	109	98
	75	91	May-June	63	32	87	82
Cle Elum River	340	80	May-Sept	340	186	506	423
nr. Roslyn 8/	310	82	May-July	299	150	429	379
	250	83	May-June	244	128	314	302
Bumping River	94	71	May-Sept	97	49	163	132
nr. Nile 9/	83	70	May-July	85	41	140	119
	70	75	May-June	69	37	98	93
American River	77	68	May-Sept		39	120	114
nr. Nile	71	69	May-July		33	103	103
	58	71	May-June		29	73	82
Tieton River	160	72	May-Sept	201	109	267	223
at Tieton Dam 10/	130	71	May-July	158	73	208	183
	105	76	May-June	119	57	145	139
Naches River	550	72	May-Sept	560	256	908	768
nr. Naches 11/	470	69	May-July	495	204	770	680
	400	72	May-June	403	174	579	555
Ahtanum Creek	27	70	May-Sept		6	43	39
nr. Tampico 12/	24	69	May-July		5	37	35
	19	66	May-June		4	29	29

4/ Observed flow corrected for storage in Lake Keechelus.
5/ Observed flow corrected for storage in Keechelus, Kachess, and Cle Elum Lakes and diversion by Kittitas Canal.
6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.
7/ Observed flow corrected for storage in Lake Kachess.
8/ Observed flow corrected for storage in Lake Cle Elum.
9/ Observed flow corrected for storage in Bumping Lake.
10/ Observed flow corrected for storage in Rimrock Lake.
11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.
12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1979	% 15-Yr. Avg.	Fore-cast period	Seasonal streamflow in Thousands of Acre-Feet 1978	1977	1976	15-Yr. Average 63-77
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek	8.3	108	May-Sept		0.8	10.6	7.7
at Walla Walla	8.1	108	May-July		0.6	10.4	7.5
	7.9	108	May-June		0.5	10.4	7.3
Lewis River	590	63	May-Sept		749	957	960
at Ariel 13/	450	57	May-July		551	801	790
	380	58	May-June		482	662	654
Cowlitz River	1010	61	May-Sept		1165	1881	1717
bl. Mayfield Dam	830	57	May-July		888	1548	1445
	670	59	May-June		763	1169	1144
Cowlitz River	1190	55	May-Sept		1598	2302	2170
at Castle Rock 14/	940	52	May-July		1207	1872	1804
	780	54	May-June		1042	1442	1432
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River	126	88	May-Sept		82	143	143
nr. Sequim	102	90	May-July		59	110	113
	73	92	May-June		45	74	79
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River	1515	70	May-Sept		560	2734	2161
at Newhalem 15/	1390	69	May-August		475	2521	2017
	1210	68	May-July		368	2113	1776
	865	67	May-June		261	1386	1290
ELWHA RIVER SYSTEM							
Elwha River	420	88	May-Sept		298	551	480
nr. Port Angeles	330	87	May-July		223	430	381
GREEN RIVER SYSTEM							
Green River	165	71	May-Sept		140	228	233
bl. Howard Hanson Dam 16/							
CEDAR RIVER SYSTEM							
Cedar River	66	71	Apr-Sept		55	91	93
nr. Cedar Falls							

13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

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COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about May 1, 1979 as percent of the same date in 1978 and 1977 and average of record.

Tributary Basin	No. of Courses Average	1979 Snow Water Expressed as percent of 1978	1977	1963-77 Avg.
UPPER COLUMBIA BASIN				
Pend Oreille	14	140	402	89
Kettle	11	74	296	70
Spokane	8	154	340	88
Okanogan	30	63	190	60
Methow	3	25	152	29
Chelan	1	63	135	62
Entiat	8	51	372	60
Wenatchee	9	172	480	86
Squilchuck	1	87	-	59
Stemilt	2	72	-	86
Colockum	3	83	-	64
Yakima	15	171	363	75
LOWER COLUMBIA BASIN				
Mill Creek	1	271	-	151
Asotin	1	166	1483	108
Cowlitz	1	135	-	81
PUGET SOUND				
White	2	103	254	82
Green	3	152	426	82
Snoqualmie	1	211	277	82
Skykomish	2	106	288	77
Skagit	14	132	355	67
Nooksack	1	131	165	73
Baker	9	100	141	63
OLYMPIC PENINSULA				
Morse Creek	1	116	215	78
Elwha	1	122	189	57
Dungeness	1	180	281	90

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured May 1 1979	1978	1977	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	260.5	202.4	179.3	238.4
Columbia	Franklin D. Roosevelt Lake	5232.0	909.9	860.4	1688.2	867.8
Columbia	Banks Lake	714.9	393.4	505.0	464.3	442.8
Okanogan	Conconully Reservoir	13.0	10.3	5.7	7.4	7.7
Okanogan	Salmon Lake	10.5	10.5	7.4	9.3	8.0
Chelan	Lake Chelan	676.1	163.4	242.2	268.8	219.0
		YAKIMA				
Yakima	Keechelus Lake	157.8	117.0	150.4	118.5	113.8
Kachess	Kachess Lake	239.0	228.0	237.2	234.2	194.2
Cle Elum	Lake Cle Elum	436.9	180.9	373.5	441.3	295.9
Bumping	Bumping Lake	33.7	13.3	32.4	26.2	11.6
Tieton	Rimrock Lake	198.0	146.4	170.6	154.6	136.6
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	731.6	793.0	539.5	711.5
Skagit	Diablo Reservoir	90.6	86.8	83.3	86.8	86.4
Skagit	Gorge Reservoir	9.8	8.0	7.8	7.1	8.1

1/ Based on Active Storage

* 15-yr. Average 1963-1977

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SOIL MOISTURE - May

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content Inches as of May 1 1979	1978	1977
OKANOGAN							
Salmon Meadows	19A2M	4500	48	5.4	-	-	3.8
Trout Creek	3-M	3600	48	7.3	Late	5.4	4.0
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	10.1	9.1	6.4
Helmers	17C2M	4400	48	12.0	-	9.4	10.1
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	11.4	12.6	8.0

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content (Inches) as of Oct. 1 1978	1977	1976
OKANOGAN							
Salmon Meadows	19A02M	4500	48	5.4	-	-	3.4
Trout Creek	3-M	3600	48	7.3	3.7	3.2	3.4
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	5.9	-	-
Helmers	17C2M	4400	48	12.0	8.2	-	-
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	10.3	6.6	-

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct 1978 2/ Observed	FALL Departure	WINTER Nov.-1978--Mar.-1979 Observed	WINTER Departure	SPRING April 1979 Observed	SPRING Departure
Columbia in Canada	6.29	+1.27	12.00	-3.51	1.53	-0.18
Pend Oreille - Spokane	2.09	-1.95	13.90	-4.36	1.99	+0.17
Northeastern Washington	1.74	-0.73	7.27	-2.13	1.24	-0.02
Southeastern Washington	1.22	-1.29	9.82	-0.61	2.08	+0.55
Central Washington	0.60	-0.37	3.34	-1.94	0.52	-0.13
North Central Washington	2.22	+0.63	3.78	-2.76	0.55	-0.30
Northwest Slope Cascades	9.89	-3.32	43.16	-12.23	6.43	-0.21
Southwest Slope Cascades	6.18	-2.50	26.74	-14.90	3.64	-0.98

Northeastern Washington - Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.

Southeastern Washington - Touchet, Tucannon and Palouse Drainages.

Central Washington - Yakima, Wenatchee and Chelan Drainages.

North Central Washington - Methow and Okanogan Drainages.

Northwest Slope Cascades - Puget Sound Drainages.

Southwest Slope Cascades - Lower Columbia Drainages.

1/ - Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

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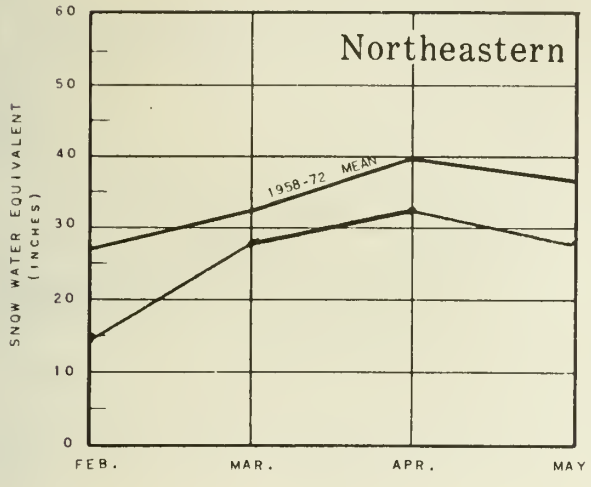
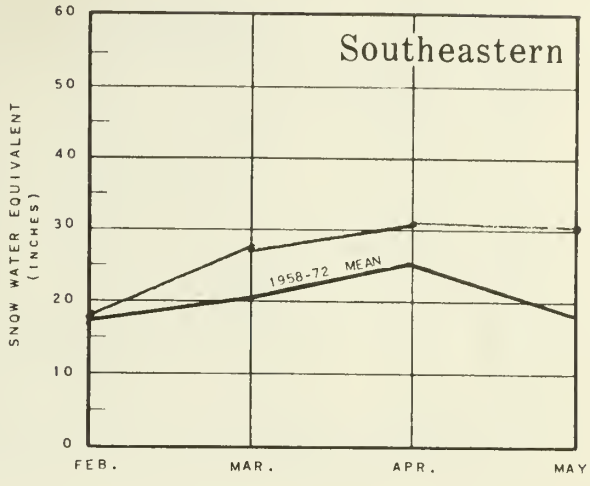
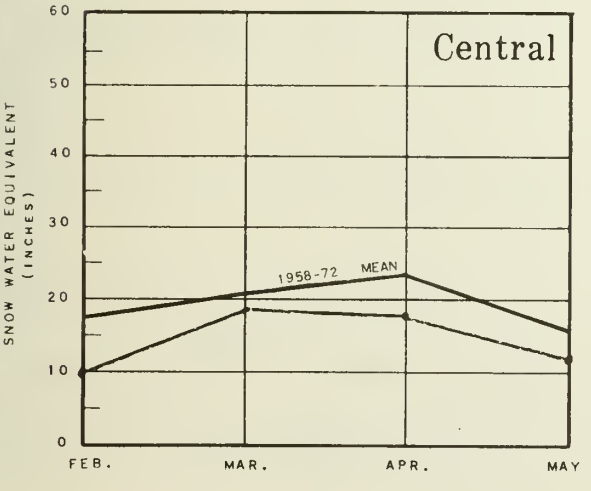
WASHINGTON SNOW COVER

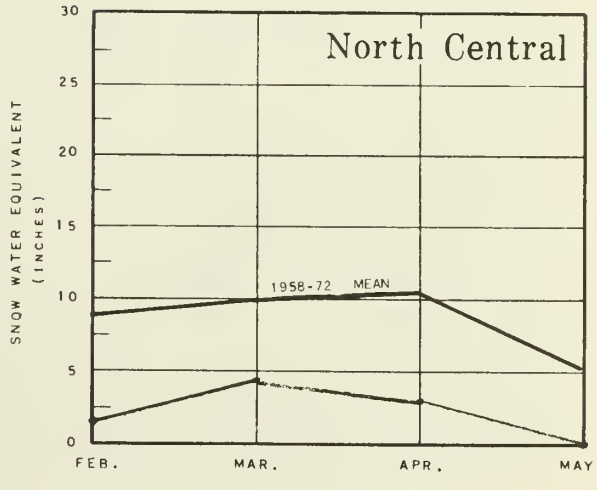
1979

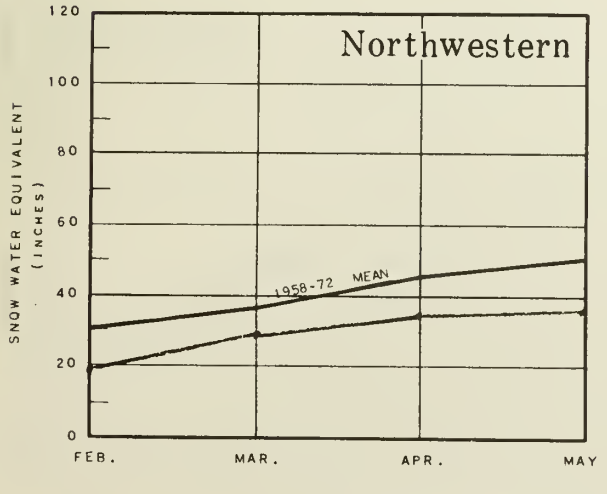
DRAINAGE AREAS

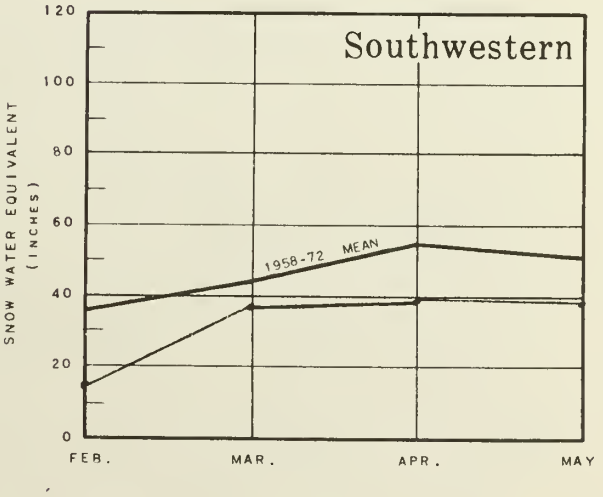










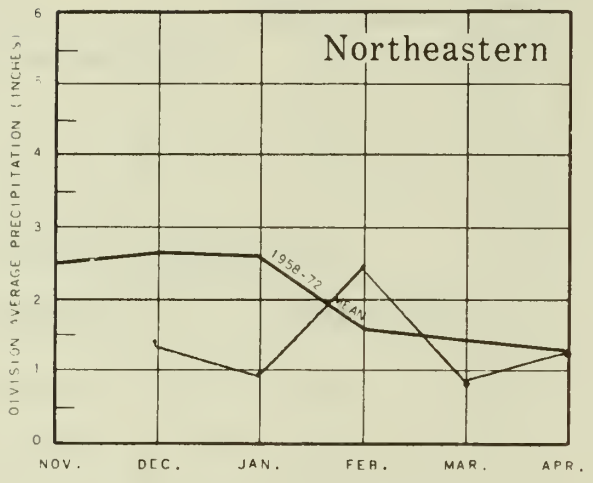


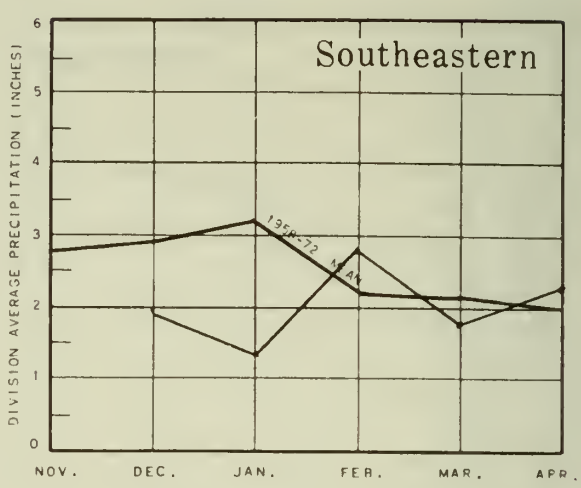
Selected Snow Survey Courses by Soil Conservation Service

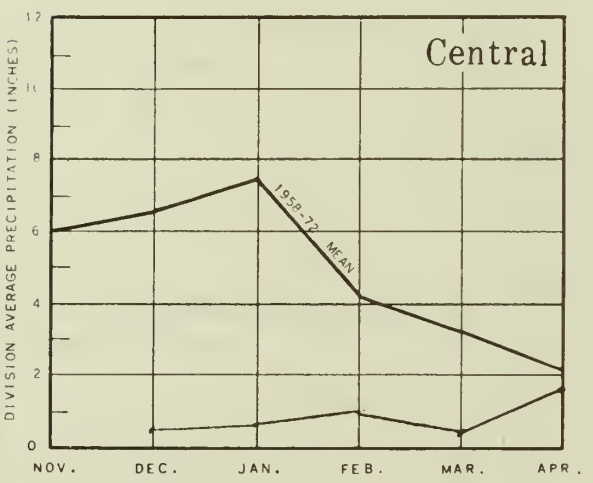
WASHINGTON VALLEY PRECIPITATION

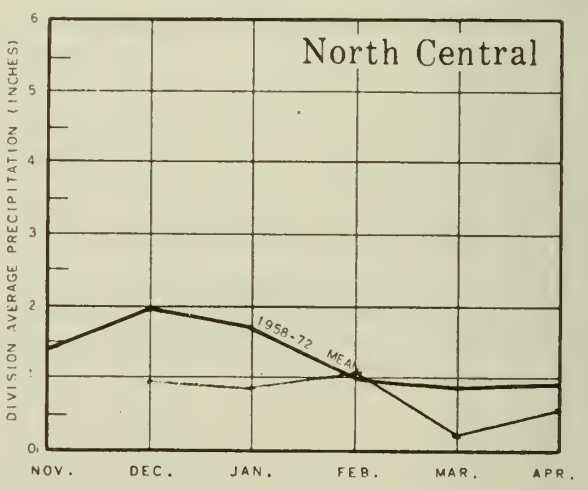
1979

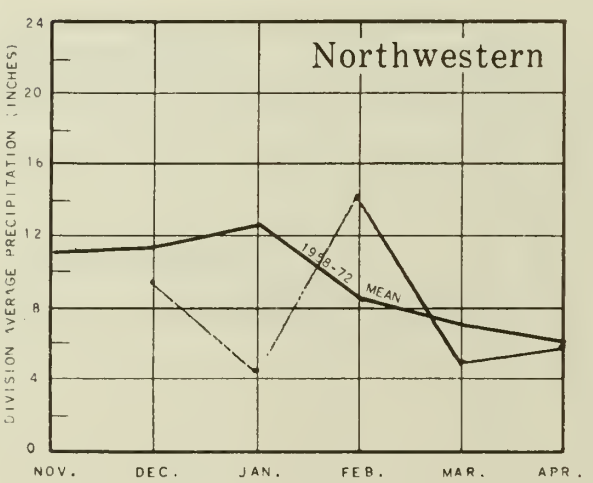
DRAINAGE AREAS

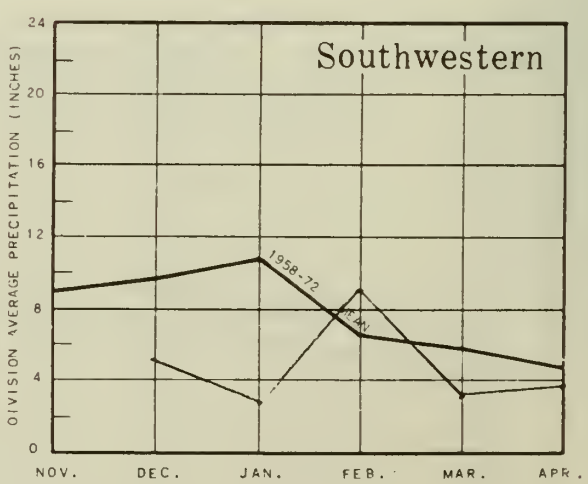












Preliminary Analysis by National Weather Service

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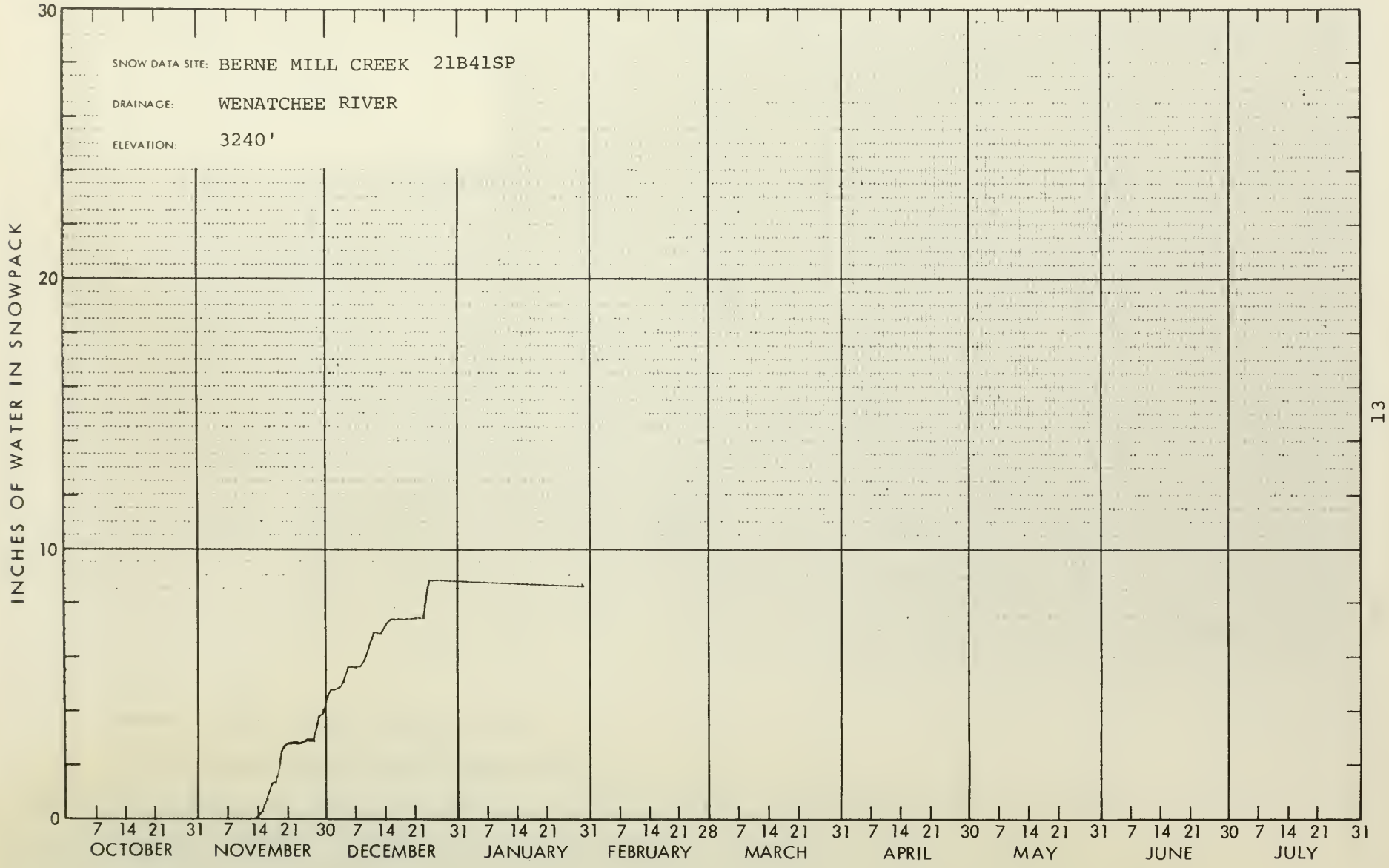
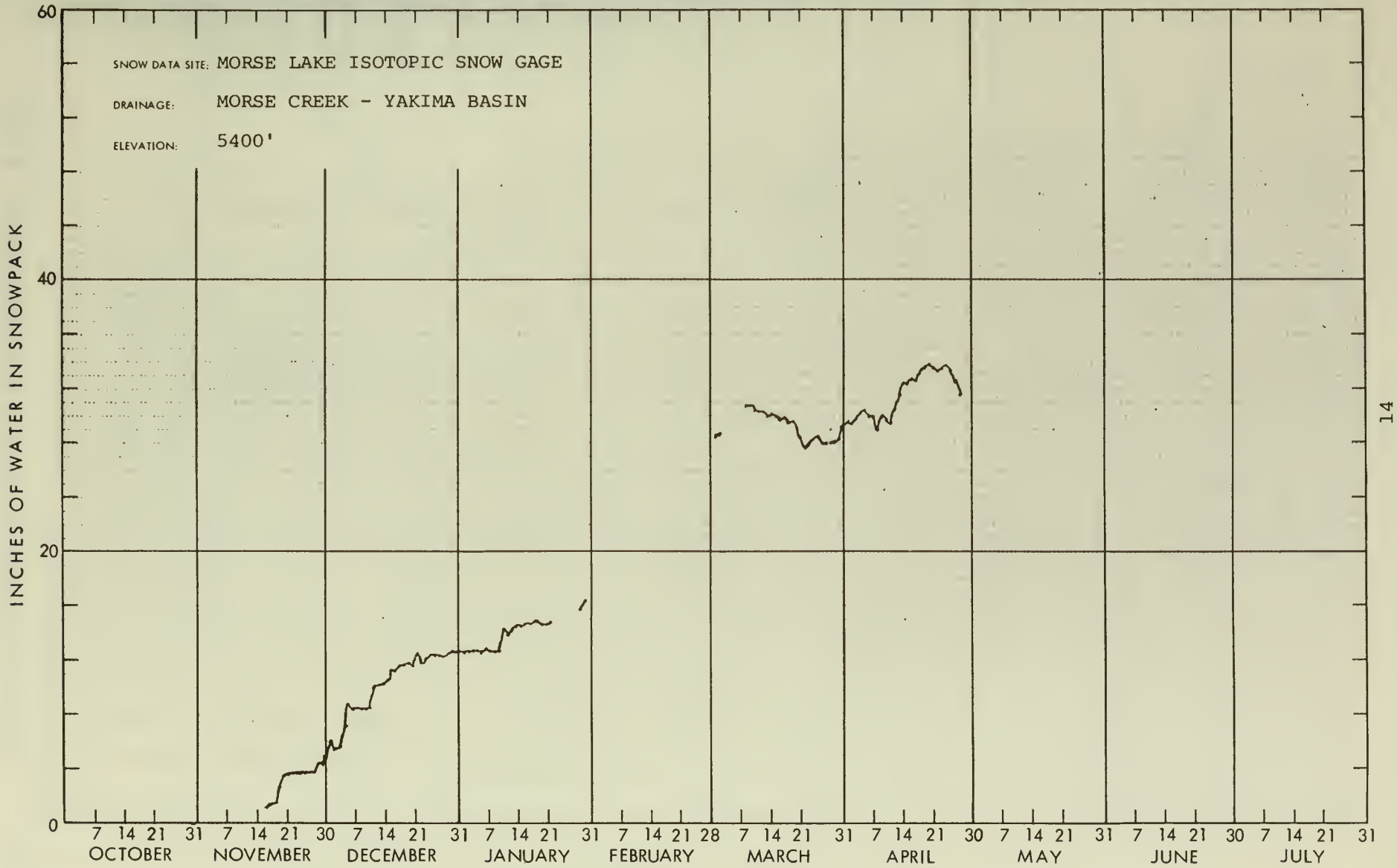
WSFB-X 138


SNOW DATA SITE: BERNE MILL CREEK 21B41SP
DRAINAGE: WENATCHEE RIVER
ELEVATION: 3240'
INCHES OF WATER IN SNOWPACK
30
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

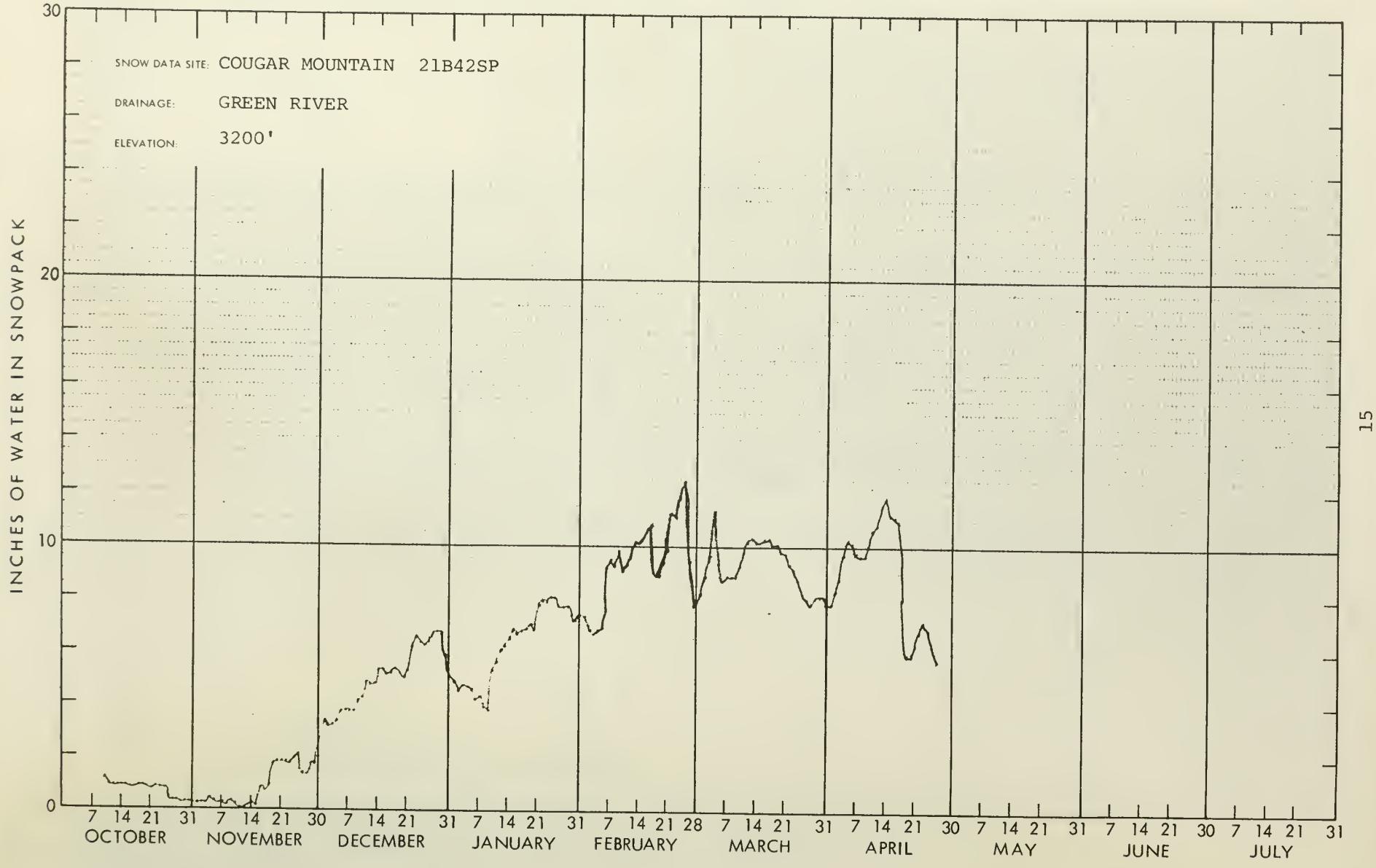
13

WSFB-X13C


SNOW DATA SITE: MORSE LAKE ISOTOPIC SNOW GAGE
DRAINAGE: MORSE CREEK - YAKIMA BASIN
ELEVATION: 5400'
INCHES OF WATER IN SNOWPACK
60
40
20
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY

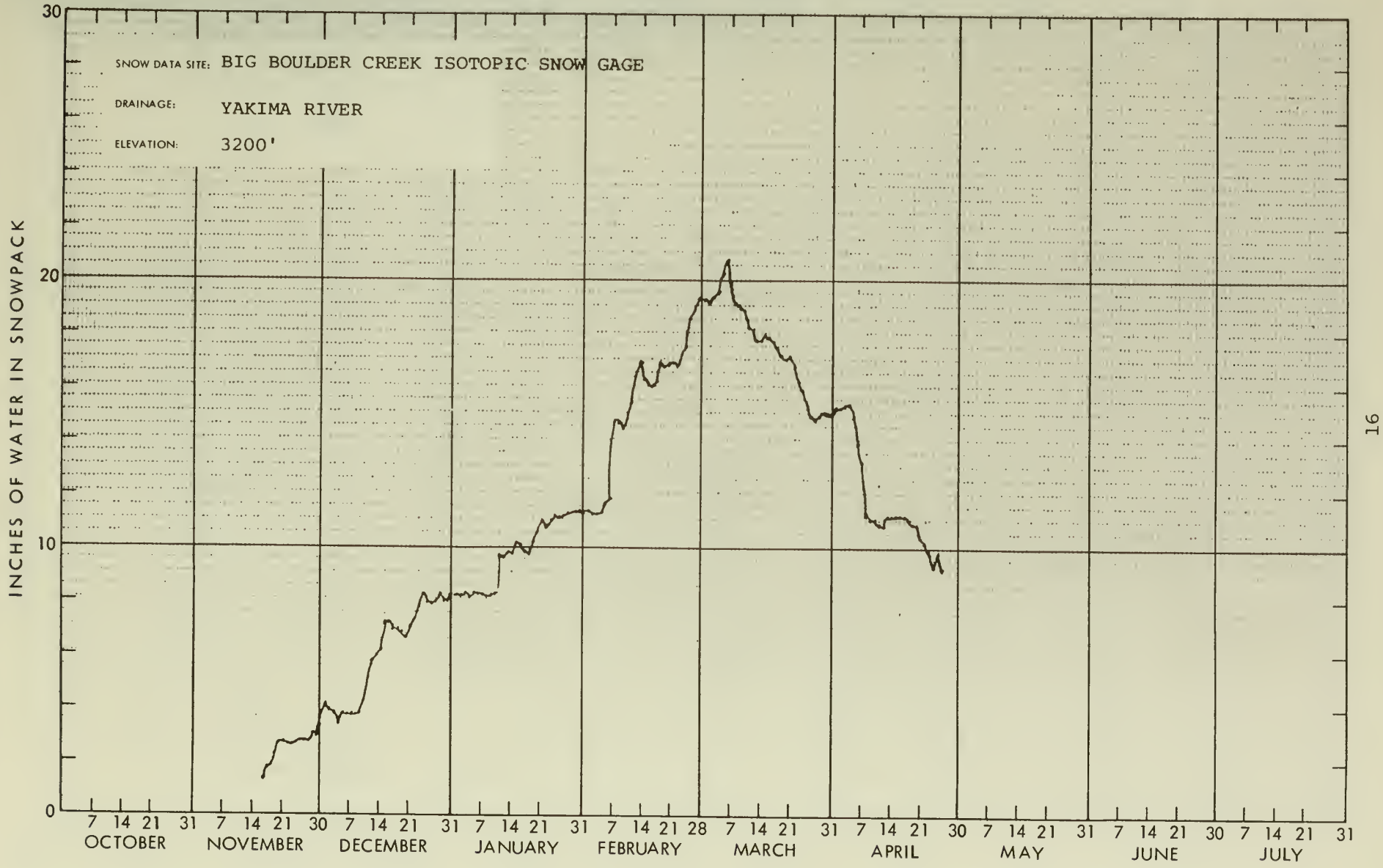
14

WSFB-X138


SNOW DATA SITE: COUGAR MOUNTAIN 21B42SP
DRAINAGE: GREEN RIVER
ELEVATION: 3200'
INCHES OF WATER IN SNOWPACK
30
20
10
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

15

WSFB-X13B



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USDA-SCS-PORTLAND OR. 1978

SNOW DATA TO MAY 1, 1979 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Water Content (inches) Average #
PEND OREILLE RIVER							
Baree Creek	15B11	5500	4/30	87	42.0	37.8	49.5
Baree Midway	15B16	4600	4/30	72	32.0	20.8	35.1
Baree Trail	15B15	3800	4/30	0	0.0	0.0	1.8
Benton Meadow	16A02	2344	4/26	0	0.0	0.0	0.0
Benton Spring	16A03	4900	4/26	39	16.7	10.7	16.7
Boyer Mountain	17A02	5250	4/27	49	21.4	27.2	25.2
Brush Creek Timber	14A13	5000	4/25	28	10.4	4.1	8.1
Bunchgrass Meadow	17A01	5000	4/27	50	22.7	28.9	30.0
Heart Lake Trail	14C10	4800	4/30	45	21.3	13.3	19.1
Hoodoo Basin	15C10	6000	4/30	107	49.6	52.4	55.6
Hoodoo Creek	15C01	5900	4/30	108	49.3	45.4	52.0
Lookout	15B02	5250	4/13	81	35.3	30.3	38.6
			4/30	59	28.2	29.6	35.4
Nelson	19-Can	3050	5/1	20	8.1	2.4	7.2*
Schweitzer Bowl	16A06	4500	4/27	46	21.3	17.8	26.8
Schweitzer Ridge	16A05	6100	4/27	90	37.1	51.2	47.5
Smith Creek	16A01	4800	5/1	66	31.4	36.8	47.4
Winchester Creek	17A03	2970	4/27	2.8	1.0	0.7	1.9
KETTLE RIVER							
Barnes Creek	90-Can	5300	4/27	51	18.5	21.4	21.2*
Big White Mtn.	154-Can	5500	5/2	46	17.2	21.7	21.7*
Bluejoint Mtn.	244-Can	7500	4/27	61	22.6	31.4	32.2*
Boulder Road	18A02	1450	4/30	0	0.0	0.0	0.0
Butte Creek	18A03	4070	4/30	11	4.0	6.0	6.0
Cabin Creek	18A08	3170	4/30	0	0.0	0.8	1.8
Carmi	126-Can	4100	5/2	0	0.0	1.4	2.0*
Farron # 1	17-Can	4000	4/30	13	5.2	9.0	8.5*
Farron # 2	243-Can	4000	4/30	18	6.9	10.2	9.7*
Goat Creek	18A04	3595	4/30	0	0.0	0.0	0.0
Graystoke Lake	5-Can	5950	4/30	43	15.6	16.9	22.7*
Monashee Pass	48A-Can	4500	4/27	35	11.7	13.1	13.3*
Old Glory Mountain	42-Can	7000	4/29	55	20.4	-	29.8*
Snow Caps Creek	18A05	2150	4/30	0	0.0	0.0	0.0
Snow Caps Trail	18A06	2720	4/30	0	0.0	0.0	0.0
Summit G.S.	18A07	4600	4/30	6	2.1	5.6	6.3
Trapping Creek Upper	165-Can	4450	5/2	13	4.6	4.8	6.4*

\# Average based on 1963-77 average
* Average for years of record

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO MAY 1, 1979 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
SPOKANE RIVER							
Above Burke	15B08	6100	4/30	39	18.5	13.4	19.7
Copper Ridge	16B02	4800	4/27	50	23.5	9.2	25.7
Forty-nine Meadows	15B03	5000	4/27	57	22.6	12.8	26.9
Fourth of July Summit	16B03	3100	4/27	0	0.0	0.0	0.8
Granite Peak	15B13A	6000	4/27	105	38.1	33.0	47.6
Lookout	15B02	5250	4/13	81	35.3	30.3	38.6
			4/30	59	28.2	29.6	35.4
Lost Lake	15B14A	6000	4/27	127	47.4	44.8	62.5
Lower Sands Creek	16B01	3400	4/27	47	18.3	9.7	18.3
Sherwin	16C01	3200	4/30	16	7.0	0	7.2
OKANOGAN RIVER							
Aberdeen Lake	6A-Can	4300	5/2	1.2	0.4	0.8	1.8*
Blackwall Mountain	100-Can	6250	5/1	54	22.8	33.9	38.1*
Bouleau Lake	234-Can	4580	4/28	40	9.9	13.1	12.5*
Brenda Mine	193-Can	4800	4/27	28	8.5	11.7	10.6*
Brookmere	27-Can	3200	4/27	11	2.8	4.2	5.8*
Enderby	130-Can	6250	4/27	81	30.0	46.0	43.6*
Esperon Creek Lower	164-Can	4400	4/28	16	5.3	8.5	10.4*
Esperon Creek Middle	163-Can	4700	4/28	26	9.1	12.6	13.7*
Esperon Creek Upper	162-Can	5400	4/28	39	12.7	18.4	20.2*
Graystoke Lake	5-Can	5950	4/30	43	15.6	16.9	22.7*
Hamilton Hill	107-Can	4900	4/26	28	10.2	16.6	13.3*
Harts Pass	20A05A	6500	4/27	84	33.1	56.1	51.5
Isintok Lake	152-Can	5510	4/29	14	3.5	9.1	7.6*
Lost Horse Mountain	105-Can	6300	5/1	27	8.1	10.4	10.9*
Loup Loup	19A07	4650	4/27	0	0.0	6.4	6.1
McCulloch	4-Can	4200	4/29	3.1	0.7	0.5	2.8*
Missezula Mountain	106-Can	5100	4/25	20	5.5	11.4	5.8*
Mission Creek	5A-Can	6000	4/30	48	17.2	23.5	22.0*
Monashee Pass	48A-Can	4500	4/27	35	11.7	13.1	13.3*
Mount Kobau	156-Can	5950	4/30	17	5.0	16.8	14.2*
Mutton Creek No. 1	19A01	5700	4/30	1.1	0.4	15.7	11.3
Mutton Creek No. 2SP	19A11	6000	4/30		2.8	22.2	13.9
New Copper Mountain	46A-Can	4300	4/27	0	0.0	0.0	1.5*
New Penticton Res. #2	183-Can	5225	4/30	17	4.8	9.0	9.4*
Nickel Plate Mtn.	47-Can	6200	4/29	17	6.5	13.2	8.2*
Oyama Lake	203-Can	4400	4/29	7	2.0	3.3	3.8*
Postill Lake	55-Can	4500	4/30	16	4.5	5.2	6.9*
Quartette Lake	34-Can	4000	4/27	28	9.1	9.1	11.1*
Rusty Creek	19A03	4000	4/30	0	0.0	0.7	0.8
Salmon Meadows	19A02	4500	4/30	0	0.0	6.6	5.6

\# Average based on 1963-77 average
* Average for years of record

USDA SCS PORTLAND OREGON 1973

USDA-SCS-PORTLAND, OR. 1978

SNOW DATA TO MAY 1, 1979 - APPENDIX 3

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR Date of Survey	THIS YEAR Snow Depth (Inches)	THIS YEAR Water Content (Inches)	PAST RECORD Water Content (inches) Last Year	PAST RECORD Water Content (inches) Average #
OKANOGAN RIVER (Cont.)							
Silver Star Mountain	99-Can	6050	4/29	54	21.0	36.3	28.6*
Summerland Reservoir	3A-Can	4200	4/28	19	4.7	6.7	6.9*
Touts Coulee	19A06	2845	4/27	0	0.0	-	-
Trout Creek	3-Can	4700	4/28	15	3.8	5.7	5.3*
Vaseux Creek	233-Can	4600	4/30	2	0.3	3.6	2.9*
White Rocks Mountain	70-Can	6000	4/26	52	19.4	26.5	27.7*
METHOW RIVER							
Harts Pass	20A05A	6500	4/27	84	33.1	56.1	51.5
Loup Loup	19A07	4650	4/27	0	0.0	6.4	6.1
Mutton Creek No. 1	19A01	5700	4/30	1.1	0.4	15.7	11.3
Mutton Creek No. 2 SP	19A11	6000	4/30		2.8	22.2	13.9
Rusty Creek	19A03	4000	4/30	0	0.0	0.7	0.8
Salmon Meadows	19A02	4500	4/30	0	0.0	6.6	5.6
CHELAN LAKE BASIN							
Rainy Pass	20A09	4780	4/28	76	29.4	46.8	47.5
ENTIAT RIVER							
Blue Creek G.S.	20B28a	5425	4/30	50	21.0	42.8	39.9
Brief	20B19	1600	4/28	0	0.0	0.0	0.0
Entiat Meadows +	20A33a	4540	4/30	Not Measured		36.7	35.7
Entiat River Trail +	20A34a	3325	4/30	0	0.0	11.3	3.0
Four Mile Ridge +	20B27a	6800	4/30	48	20.2	47.9	38.5
Fox Camp +	20A36a	6510	4/30	92	38.6	78.5	64.1
Pope Ridge	20B20	3540	4/27	14	5.7	10.2	9.8
Pugh Ridge +	20A32a	6725	4/30	56	23.5	44.4	30.8
Shady Pass	20A37	6200	4/27	40	16.7	38.2	31.6
Snow Brushy +	20A35a	3910	4/30	64	26.2	32.4	29.4
Tommy Creek +	20B21a	4900	4/30	22	9.2	26.5	21.7
WENATCHEE RIVER							
Berne Mill Creek	21B23	2925	4/26	51	23.1	17.9	23.9
Berne-Mill Creek New SP	21B41	3240	4/26	35	15.4	7.0	19.8
Blewett Pass No. 2	20B02	4270	4/16	30	12.1	9.2	15.3
			4/26	21	9.4	6.8	10.8
Chiwaukum G.S.	20B16	1810	4/26	1.6	0.3	0.0	1.5
Fish Lake	21B04	3371	4/26	45	21.2	-	28.0
Lake Wenatchee	20B05	1970	4/26	7.9	3.7	1.1	2.7

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO MAY 1, 1979 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD Water Content (inches) Last Year	Average #
WENATCHEE RIVER (cont.)							
Leavenworth R.S.	20B17	1127	4/25	0	0.0	0.0	0.0
Merritt	20B18	2140	4/26	17	6.6	0.0	5.5
Stevens Pass	21B01	4070	4/13	110	46.1	43.3	56.3
			4/26	93	43.0	45.5	57.5
Stevens Pass Sand Shed	21B45	3700	4/13	79	32.4	28.7	38.0
			4/26	64	29.6	25.2	37.3
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	4/27	3.5	1.3	1.5	2.2
Scout-A-Vista	20B04	3400	4/27	0	0.0	0.0	0.3
STEMILT CREEK							
Jump-Off	20B08	4450	4/26	7.2	3.0	5.2	3.3
Stemilt Slide	20B06	5000	4/26	16	6.3	7.4	7.8
Upper Wheeler	20B07	4400	4/26	0	0.0	0.0	1.3
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300	4/27	14	5.4	10.0	10.8
Colockum Creek Lower	20B23	4300	4/27	6.8	2.2	1.5	2.8
Trough # 2 SP	20B25	5310	4/27	20	7.5	15.0	New
YAKIMA RIVER							
Big Boulder Creek	21B09	3200	4/26	15	5.6	0.0	10.9
Blewett Pass No. 2	20B02	4270	4/16	30	12.1	9.2	15.3
			4/26	21	9.4	6.8	10.8
Bumping Lake	21C08	3450	4/11	25	10.4	6.0	13.8
			4/30	6.8	3.1	3.1	10.2
Bumping Lake New	21C36	3400	4/11	32	13.8	9.1	19.6
			4/30	16	6.8	6.9	15.2
Cayuse Pass	21C06	5300		Not Measured		70.9	98.1
Corral Pass	21B13	6000	4/26	80	36.8	33.5	42.6
Fish Lake	21B04	3371	4/26	45	21.2	-	28.0
Joe Lake +	21B46a	4624	4/23	153	70.4	62.4	67.0
Lake Cle Elum	21B14M	2200	4/10	0	0.0	-	2.7
Lemah Creek +	21B47a	3327	4/23	78	35.9	5.8	40.3
Morse Lake	21C17	5400	4/27	96	48.9	51.2	61.9
Olallie Meadows	21B02	3625	4/26	90	44.0	20.9	53.4
Stampede Pass SP	21B10	3860	4/16	-	46.4	28.4	42.9
			5/1	-	39.7	25.2	43.4

\# Average based on 1963-77 average

\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

USDA-SCS-PORTLAND OR. 1978

SNOW DATA TO MAY 1, 1979 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
YAKIMA RIVER (Cont.)							
Tunnel Avenue	21B08	2450	4/11	44	17.6	7.3	23.9
			4/27	28	11.8	0.0	17.5
Van Epps Pass +	20B26a	5925	4/23	95	43.7	47.0	56.1
Waptus Lake +	21B49a	3024	4/23	60	27.6	15.8	38.9
White Pass (E. Side)	21C28	4500	4/12	56	22.5	16.9	26.9
			4/26	55	22.3	16.5	27.6
LOWER COLUMBIA DRAINAGE							
ASOTIN CREEK							
Spruce Springs	17C04	5700	4/23	65	26.7	16.1	24.8
MILL CREEK							
Tollgate	18D3M	5070	4/27	60	30.4	11.2	20.1
COWLITZ RIVER							
Cayuse Pass	21C06	5300		Not Measured		70.9	98.1
White Pass (E. Side)	21C28	4500	4/12	56	22.5	16.9	26.9
			4/26	55	22.3	16.5	27.6
PUGET SOUND DRAINAGE							
WHITE RIVER							
Corral Pass	21B13	6000	4/26	80	36.8	33.5	42.6
Morse Lake	21C17	5400	4/27	96	48.9	51.2	61.9
GREEN RIVER							
Cougar Mountain SP	21B42	3200	4/26	30	14.2	0.0	20.7
Snowshoe Butte SP	21B43	5000	4/26	122	58.2	40.2	67.7
Stampede Pass SP	21B10	3860	4/15	-	46.4	28.4	42.9
			5/1	-	39.7	25.2	43.4
SNOQUALMIE RIVER							
Olallie Meadows	21B02	3625	4/26	90	44.0	20.9	53.4
SKYKOMISH RIVER							
Stevens Pass	21B01	4070	4/13	110	46.1	43.3	56.3
			4/26	93	43.0	45.5	57.5
Stevens Pass Sand Shed	21B45	3700	4/13	79	32.4	28.7	28.0
			4/26	64	29.6	25.2	37.3

Average based on 1963-77 average
\+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO MAY 1, 1979 - APPENDIX 6

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	4/28	2.6	1.1	0.0	7.3
Beaver Pass	21A01	3680	4/27	45	21.4	17.2	34.5
Brown Top Ridge +	21A28a	6000	4/27	101	43.4	50.9	74.7
Devils Park	20A04	5900	4/27	83	33.8	45.4	50.4
Freezeout Creek Trail	20A01	3500	4/27	18	6.3	1.7	10.2
Freezeout Meadows New	20A38	5000	4/27	80	37.2	24.5	40.3
Granite Creek	21A29A	3500	4/28	24	9.6	5.1	18.2
Harts Pass	20A05A	6500	4/27	84	33.1	56.1	51.5
Klesilkwa	35B-Can	3700	4/25	17	6.4	0.0	8.5*
Meadow Cabins	20A08	1900	4/28	5	2.5	0.0	1.9
New Hozomeen Lake	21A30	2800	4/27	12	4.2	0.0	10.5
New Tashme	26A-Can	2500	4/30	0	0.0	0.0	4.1*
Quartette Lake	34-Can	4000	4/27	28	9.1	9.1	11.1*
Rainy Pass	20A09	4780	4/28	76	29.4	46.8	45.7
Thunder Basin	20A07	4200	4/28	52	19.6	18.9	26.2
BAKER RIVER							
Dock Butte	21A11A	3800	4/30	118	53.0	46.7	79.3
Easy Pass	21A07A	5200	4/30	120	54.0	85.8	97.6
Jasper Pass	21A06A	5400	4/30	142	64.0	79.8	99.8
Marten Lake	21A09A	3600	4/30	138	62.0	52.8	87.0
Mount Blum +	21A18a	5800	4/30	112	50.0	69.6	76.1
Panorama New	21A26	4300	4/16	127	60.2	52.2	79.6
			4/29	106	58.0	44.3	88.3
Rocky Creek	21A12A	2100	4/30	25	12.0	0.0	28.4
Schreibers Meadow	21A10A	3400	4/30	80	38.0	37.0	70.5
S. F. Thunder Creek	21A14A	2200	4/30	0	0.0	0.0	2.0
Watson Lakes	21A08A	4500	4/30	136	61.0	50.8	77.7
NOOKSACK RIVER							
Glacier Creek	21A23	3700	4/29	47	21.6	-	27.1
Panorama New	21A26	4300	4/16	217	60.2	52.2	79.6
			4/29	106	58.0	44.3	88.3
OLYMPIC PENINSULA							
DUNGENESS RIVER							
Deer Park	23B04	5200	4/26	41	21.9	12.2	24.2
MORSE CREEK							
Cox Valley	23B14	4500	4/27	78	35.5	30.5	45.3
ELWHA RIVER							
Hurricane	23B03	4500	4/29	42	16.1	13.2	28.2

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation

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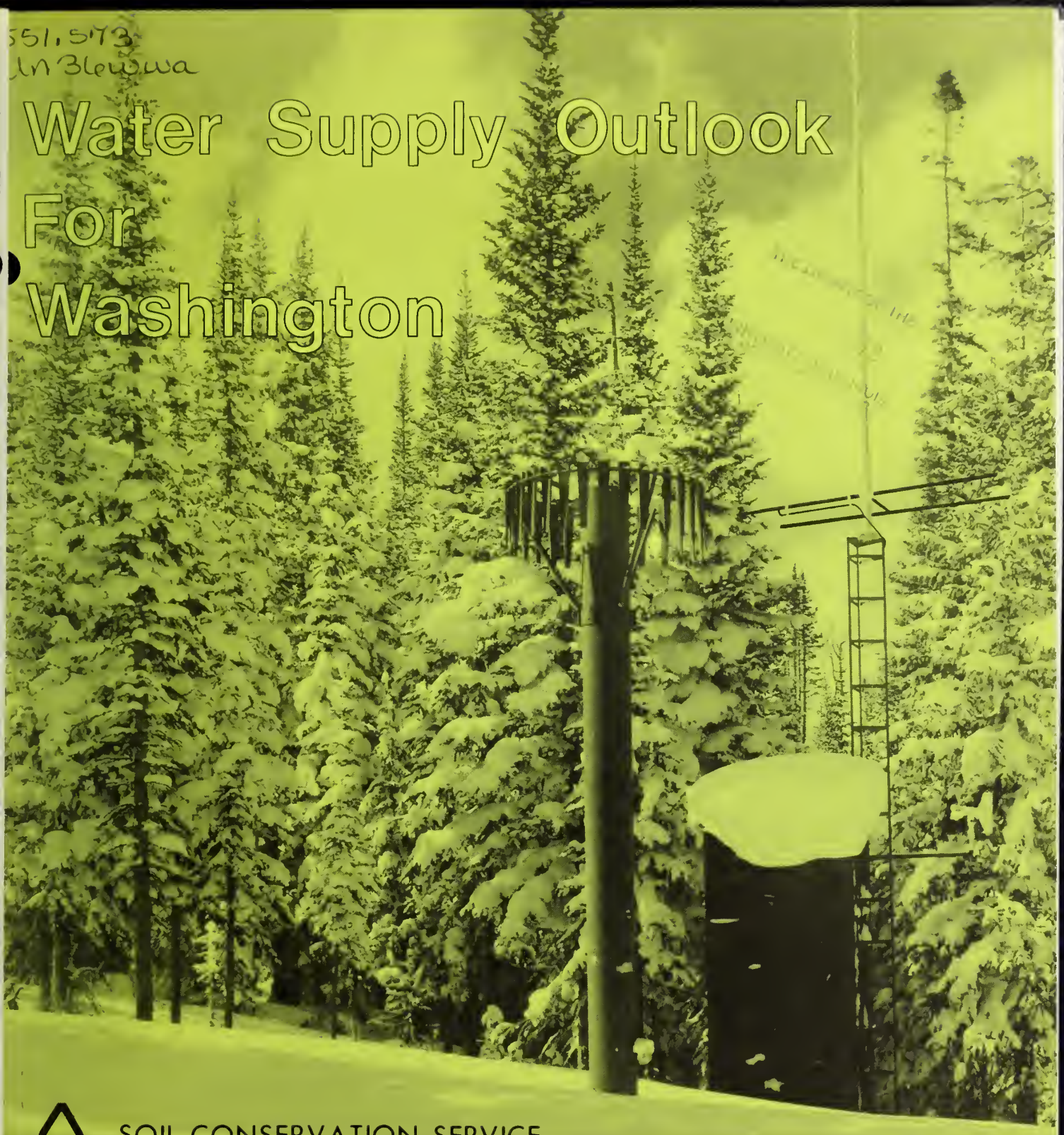
Water Supply Outlook For Washington



SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
JUNE 1, 1979

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originotes as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appeors as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advonce of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth ond water equivalent. These measurements are repeated in the same location near the same dates eoch year.

Snow surveys are made manthly ar semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United Stotes and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course ond soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations ore also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states obout every five years. Data for the current year is summarized in o West-wide basic data summory and published about October 1 of each year.

COVER PHOTO: VIEW OF A SNOTEL DATA SITE IN THE SNOWY RANGE IN WYOMING. TALL CYLINDRICAL DEVICE IS A PRECIPITATION GAGE. SNOW PILLOWS ON THE GROUND NOT VISIBLE DUE TO SNOW COVER. SHELTER HOUSE, ANTENNA TOWER, ANTENNA, AND TEMPERATURE UNIT ARE VISIBLE BEHIND THE PRECIPITATION GAGE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtoined from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizono 85025
Colorodo (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozemon, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South Stote St., Salt Loke City, Utoh 84138
Woshington	360 U. S. Court House, Spokone, Woshington 99201
Wyoming	P. O. Box 2440, Cosper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

USDA-SCS-PORTLAND, OR. 1978

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

R.M. DAVIS

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON D C

Released by

GALEN S. BRIDGE

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

WILBUR G. HALLAUER

DIRECTOR
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

Report prepared by

ROBERT T. DAVIS, Snow Survey Supervisor
and
NORINE P. KENT, Statistical Assistant

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201

SCS PORTLAND OR 1976 M7-L-22028

Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T5G 1A6.

USDA-SCS-PORTLAND, OR. 1978

WATER SUPPLY OUTLOOK

State of Washington

June 1, 1979

****
* The water supply picture continues to deteriorate as the *
* spring progresses. We measure very few snow courses in the *
* state of Washington as of June 1, and only a few were *
* measured as of May 15. Most of the snow course readings are *
* made in the tributary basins in Montana and British *
* Columbia. Except for one snow course in Montana, all May 15 *
* readings are subnormal - ranging from 14 percent to *
* 132 percent. As of June 1, all snow courses have lost *
* ground and the snow cover now ranges from 11 percent to *
* 79 percent. Rainfall was subnormal over the whole state; *
* and only in the Upper Columbia Drainage Division, was *
* precipitation above normal. The above normal temperatures *
* of this past month accounted for the good streamflows that *
* occurred from the lower elevation watersheds such as the *
* Palouse, Walla Walla, and Spokane, The main stem of the *
* Columbia was just a fraction below normal. *
****

THIS IS THE LAST WATER SUPPLY OUTLOOK REPORT FOR 1979. IF YOU WISH TO RECEIVE THESE REPORTS NEXT YEAR, PLEASE RETURN THE BACK COVER OF THE MAY 1 REPORT IF YOU HAVE NOT ALREADY DONE SO.

SNOW COVER

In the Pend Oreille River Drainage, May 15 snow cover was 84 percent of normal. This deteriorated to 59 percent of normal as of June 1. Fewer snow courses were measured in the Kettle River Basin, and the snow cover went from 68 percent on May 15 to 13 percent on June 1. No measurements were made in the Colville Drainage; but on the Spokane Watershed, the snowpack decreased from 62 to 45 percent. The most snow courses were measured in the Okanogan Basin. There, the snowpack decreased only 11 percent - from 51 to 40 percent. Nothing was measured on the Methow and only May 15 measurements were made in the Chelan Lake Basin where the snow cover from four snow courses averages 60 percent of average. On the Wenatchee Drainage, only Stevens Pass and Stevens Pass Sand Shed were measured. The Stevens Pass Snow Course went from 31.2 inches of water to 13.5, a drop of 31 percent from 64 to 33 percent. The Sand Shed Course had 13.3 inches of water on the 14th, but by the 31st, was bare. Stampede Pass was the only snow course measured in the Yakima Drainage. This course dropped from 41 percent of normal on May 14 to 13 percent as of May 31.

RESERVOIRS

Irrigation reservoirs are all in excellent shape. Most have spilled already or will in the next week. Power reservoirs have generally above normal amounts of water in storage and these should all fill within the next month.

PRECIPITATION

Rainfall over the state and tributary basins during May was below normal in all drainage divisions except the Columbia above Castlegar. The range was 7 percent above to 58 percent below. The latter was for the Central Washington Drainage Division. The spring period of April and May was better. Above normal rainfall occurred in the Pend Oreille and Southeastern Washington Drainage Divisions - 4 and 18 percent above, respectively. Central Washington is still the low rainfall area with 40 percent below average precipitation.

STREAMFLOW

Warm, dry weather prevailed over most of the state during May. The warm air melted the snow at an above normal rate, but generally not at a rate that caused much damage. Above normal flows occurred on the Skykomish, Pend Oreille, Spokane, Wenatchee, Palouse, and Walla Walla Rivers, with subnormal flows for the rest. The Klickitat had the least flow, percentagewise, 67 percent; and the Palouse the greatest, 154 percent.

USDA-SCS-PORTLAND, OR. 1978

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured June 1 1979	1978	1977	Normal*
		COLUMBIA				
Spokane	Coeur d"Alene Lake	225.1	236.2	190.0	239.6	225.0
Columbia	Franklin D. Roosevelt Lake	5232.0	3433.6	2211.4	2580.9	2565.6
Columbia	Banks Lake	714.9	456.6	527.9	616.0	406.2
Okanogan	Conconully Reservoir	13.0	10.5	9.6	6.5	9.1
Okanogan	Salmon Lake	10.5	8.1	10.5	9.4	9.4
Chelan	Lake Chelan	676.1	437.3	470.3	391.3	450.6
		YAKIMA				
Yakima	Keechelus Lake	157.8	157.6	158.9	140.6	139.6
Kachess	Kachess Lake	239.0	236.9	242.2	223.6	217.1
Cle Elum	Lake Cle Elum	436.9	338.0	441.2	391.8	367.9
Bumping	Bumping Lake	33.7	35.1	34.7	34.9	25.4
Tieton	Rimrock Lake	198.0	171.0	199.0	161.9	160.2
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	1107.7	1068.0	689.9	1033.9
Skagit	Diablo Reservoir	90.6	87.2	84.9	86.8	86.1
Skagit	Gorge Reservoir	9.8	8.1	8.2	7.9	8.3

1/ Based on Active Storage

* 15-yr. Average 1963-1977

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct 1978 2/ Observed	FALL Departure	WINTER Nov.-1978--Mar.-1979 Observed	WINTER Departure	SPRING Apr-May 1979 2/ Observed	SPRING Departure
Columbia in Canada	6.29	+1.27	12.00	-3.51	3.41	-0.06
Pend Oreille - Spokane	2.09	-1.95	13.90	-4.36	4.00	+0.15
Northeastern Washington	1.74	-0.73	7.27	-2.13	2.58	-0.43
Southeastern Washington	1.22	-1.29	9.82	-0.61	3.46	+0.53
Central Washington	0.60	-0.37	3.34	-1.94	0.81	-0.54
North Central Washington	2.22	+0.63	3.78	-2.76	1.16	-0.61
Northwest Slope Cascades	9.89	-3.32	43.16	-12.23	9.40	-0.97
Southwest Slope Cascades	6.18	-2.50	26.74	-14.90	6.00	-1.34

Northeastern Washington - Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.

Southeastern Washington - Touchet, Tucannon and Palouse Drainages.

Central Washington - Yakima, Wenatchee and Chelan Drainages.

North Central Washington - Methow and Okanogan Drainages.

Northwest Slope Cascades - Puget Sound Drainages.

Southwest Slope Cascades - Lower Columbia Drainages.

1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

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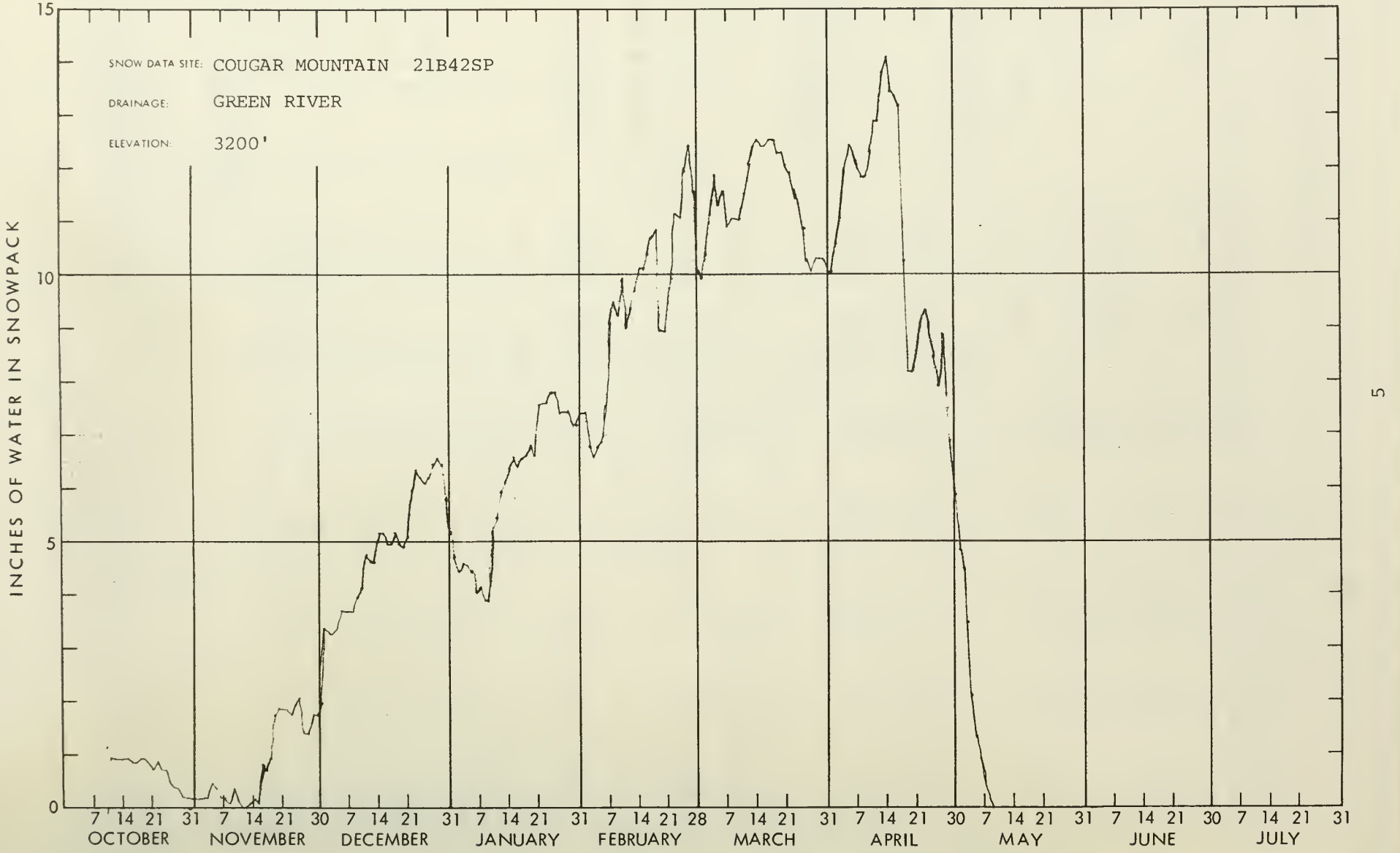
SNOW DATA SITE: COUGAR MOUNTAIN 21B42SP
DRAINAGE: GREEN RIVER
ELEVATION: 3200'
INCHES OF WATER IN SNOWPACK
15
10
5
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

5

SNOW DATA TO JUNE 1, 1979 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	Average#
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Baree Creek	15B11	5500	5/15	63	33.1	33.9	41.5
Baree Midway	15B16	4600	5/15	40	21.1	14.8	25.0
Baree Trail	15B15	3800	5/15	0	0.0	0.0	0.0
Heart Lake Trail	14C10	4800	5/15	27	13.5	2.8	10.2
			5/31	0	0.0	-	-
Hoodoo Basin	15C10	6000	5/15	87	40.0	43.7	50.5
			5/31	50	28.8	39.2	39.0
Hoodoo Creek	15C01	5900	5/15	86	40.0	39.2	46.2
			5/31	54	28.9	36.9	36.5
Lookout	15b02	5250	5/13	39	20.0	22.5	30.9
			5/30	7	3.7	14.8	15.0
Nelson	19-Can	3050	5/14	1.6	0.7	0.0	1.1*
			5/30	0	0.0	0.0	0.1*
Schweitzer Bowl	16A06	4500	5/25	0	0.0	-	-
Schweitzer Ridge	16A05	6100	5/25	32	16.7	-	-
KETTLE RIVER							
Big White Mtn.	154-Can	5500	5/16	31	12.5	19.3	18.5*
			5/31	3.5	1.4	14.9	11.1*
Monashee Pass	48A-Can	4500	5/15	15	6.2	7.2	9.1*
			5/31	0	0.0	1.8	2.2*
SPOKANE RIVER							
Granite Peak	15B13A	6000	5/30	46	20.6	24.8	31.5
Lookout	15B02	5250	5/14	39	20.0	22.5	30.9
			5/30	7	3.7	14.8	15.0
Lost Lake	15B14A	6000	5/30	64	28.2	35.8	46.4
OKANOGAN RIVER							
Blackwall Mountain	100-Can	6250	5/15	41	19.6	30.7	36.6*
			6/1	19	10.4	21.7	28.7*
Brenda Mine	193-Can	4800	5/15	0	0.0	0.0	2.5*
			5/30	0	0.0	0.0	0.0*
Brookmere	27-Can	3200	5/13	0	0.0	0.0	2.3*
Enderby	130-Can	6250	5/15	67	28.0	48.1	45.2*
			5/31	51	23.4	47.4	39.1*
Hamilton Hill	107-Can	4900	5/13	0	0.0	9.7	6.8*
Isintok Lake	152-Can	5510	5/15	0	0.0	6.6	5.3*
McCulloch	4-Can	4200	5/15	0	0.0	0.0	0.6*
Missezula Mountain	106-Can	5100	5/14	0	0.0	7.5	2.9*

\# Average based on 1963-1977
* Average for years of record

USDA SCS PORTLAND OREGON 1973

USDA-SCS-PORTLAND, OR. 1978

SNOW DATA TO JUNE 1, 1979 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Water Content (inches) Average #
OKANOGAN RIVER (Cont.)							
Mission Creek	5A-Can	6000	5/15	40	15.8	22.0	19.5*
			5/29	18	6.9	19.9	12.6*
Monashee Pass	48A-Can	4500	5/15	15	6.2	7.2	9.1*
			5/31	0	0.0	1.8	2.2*
Mount Kobau	156-Can	5950	5/14	5.5	2.0	13.9	11.2*
			5/31	0	0.0	9.5	4.8*
New Penticton Res.#2	183-Can	5225	5/15	3.1	0.9	6.7	6.6*
			5/31	0	0.0	1.1	1.5*
Silver Star Mountain	99-Can	6050	5/14	41	17.0	31.6	26.7*
			5/30	17	6.9	28.5	17.4*
Summerland Reservoir	3A-Can	4200	5/15	0	0.0	0.8	2.5*
Trout Creek	3-Can	4700	5/13	0	0.0	1.0	1.9*
Vaseux Creek	233-Can	4600	5/14	0	0.0	0.0	0.3*
White Rocks Mountain	70-Can	6000	5/30	4	1.8	16.4	15.6*
CHELAN LAKE BASIN							
Cloudy Pass +	20A22a	6500	5/16	68	36.7	-	54.0
Little Meadows +	20A24a	5275	5/16	46	24.8	-	-
Lyman Lake	20A23A	5900	5/16	60	32.8	-	62.9
Park Creek Ridge	20A12A	4600	5/15	27	14.2	-	-
WENATCHEE RIVER							
Stevens Pass	21B01	4070	5/14	59	31.2	38.0	48.8
			5/31	25	13.5	24.7	40.6
Stevens Pass Sand Shed	21B45	3700	5/14	26	13.3	16.0	25.4
			5/31	0	0.0	2.9	18.7
YAKIMA RIVER							
Stampede Pass SP	21B10	3860	5/14	36	17.0	9.4	41.7
			5/31	7.1	3.6	2.0	26.9

\+ Snow water equivalent estimated from aerial stadia observation
\# Average based on 1963-77 average
* Average for years of record

SNOW DATA TO JUNE 1, 1979 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
						Last Year	Average #
LOWER COLUMBIA DRAINAGE							
PUGET SOUND DRAINAGE							
GREEN RIVER							
Stampede Pass SP	21B10	3860	5/14	36	17.0	9.4	41.7
			5/31	7.1	3.6	2.0	26.9
SKYKOMISH RIVER							
Stevens Pass	21B01	4070	5/14	59	31.2	38.0	48.8
			5/31	25	13.5	24.7	40.6
Stevens Pass Sand Shed	21B45	3700	5/14	26	13.3	16.0	25.4
			5/31	0	0.0	2.9	18.7
BAKER RIVER							
Dock Butte	21A11A	3800	5/24	60	33.0	-	57.2
Easy Pass	21A07A	5200	5/24	66	36.0	-	75.8
Jasper Pass	21A06A	5400	5/24	90	50.0	-	85.6
Marten Lake	21A09A	3600	5/24	93	51.0	-	68.9
Mount Blum	21A18a	5800	5/24	84	46.0	-	72.1
Panorama New	21A26	4300	5/14	75	45.9	-	-
Rocky Creek	21A12A	2100	5/24	0	0.0	-	2.2
Schreibers Meadow	21A10A	3400	5/24	40	22.0	-	46.3
S. F. Thunder Creek	21A14A	2200	5/24	0	0.0	0.0	-
Watson Lakes	21A08A	4500	5/24	67	37.0	-	62.6
NOOKSACK RIVER							
Panorama New	21A26	4300	5/14	75	45.9	-	-
CORRECTIONS AND ADDITIONS - 1979 SNOW REPORTS							
			March 1				
YAKIMA RIVER							
Big Boulder Creek	21B09	3200	2/27	64	19.5	15.3	19.3
Waptus Lake +	21B49a	3024	2/19	93	31.6	30.8	41.4
Lake Cle Elum	21B14M	2200	3/1	32	10.8	7.0	9.2
			April 1				
CHELAN LAKE BASIN							
Cloudy Pass +	20A22a	6500	4/7	86	38.7	-	49.8
Little Meadows +	20A24a	5275	4/7	88	39.6	-	49.0
Lyman Lake	20A23A	5900	4/7	99	43.8	59.3	65.5
Park Creek Ridge	20A12A	4600	4/7	68	66.7	46.6	47.0

\+ Snow water equivalent estimated from aerial stadia observation

\# Average based on 1963-77 average

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Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
  Corps of Engineers
U. S. Department of Agriculture
  Forest Service
U. S. Department of Commerce
  NOAA, National Weather Service
U. S. Department of the Interior
  Bonneville Power Administration
  Bureau of Reclamation
  Geological Survey
  National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"

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